# THE SCHOOL REVIEW

A JOURNAL OF SECONDARY EDUCATION

VOLUME VI
NUMBER 1

JANUARY, 1898

WHOLE
NUMBER 51


## THE GROWTH OF MIND AS A REAL AND THE INFLUENCE OF THE FORMAL ON THE REAL

### CHAPTER I

#### THE REAL AND FORMAL

I HAVE in the Institutes of Education first surveyed mind on the sensational or attuitional plane, taking animal or pre-rational mind as object of investigation; and thereafter, I dealt with the higher evolution — the formal of mind as that emerges in the man-animal. This "formal" of mind (pure reason) has for its function, the discrimination and elaboration of the crude matter of attuition, and also continues, without ceasing, to deal with the knowledge results, already more or less elaborated by the earlier activities of the formal process. But the primary matter on which the activity of the formal process first exercises itself is the datum of sense-attuition (inner and outer), or, generally, of Recipience.

The total resultant at any one moment in any normal mind, accordingly, is: (*a*) attuitional or recipient data; (*b*) the universals in the data which constitute the conditions of the possibility of all sentience; (*c*) the formal process itself; and (*d*) the resultant elaborations of that formal process. All this taken together we may call the Real of mind, and of each individual mind at any particular moment of time. For the formal process is itself a real in a higher meaning than the received data in

sense (inner and outer). At the same time, we need a word to designate the "given" or recipient in mind as distinguished from the formal; and, accordingly, it is as well to use the recognized term "real" to name the recipient datum generally. The total resultant of real and formal in a consciousness might be called "factual" mind.

I have dealt in a very brief and perfunctory way with the growth of the real of mind in the Institutes and I would now offer to those who are interested in the subject as students of educational theory a fuller treatment of the way in which attuitional mind seems to me to build itself up as a concrete whole of experience.

## CHAPTER II

### DYNAMICS OF MIND

### *The Real in Mind as Received*

The real which exists and builds itself up in the conscious subject, prior to the emergence of formal pure activity as will-reason, proceeds in accordance with natural laws which have probably a close analogy with the natural processes that build up the physical vehicle of nerve-tissue; nay, also the processes that build up all organisms. When *B* is presented to *A* (the conscious subject) and *A* is aware of it (I pass over rudimentary "feeling," of which we can know little) we call *A* mind and *B* the presentation. But, further, mind being the "subject" of the presentation we call *B* the "object." This is the stage of Sensation.

Whether from within the body or from without the body, the access of presentations is through nerve-tissue, and the reactions are also through nerve-tissue. The terminal of the impression is consciousness, and the reflex return starts in and from consciousness.

This nerve-tissue (which may be summed up in the one word *cerebrum*), inasmuch as it is matter, obeys the laws of matter, and, as vehicle of consciousness, receptive, or reactive, or active, is probably the highest department of physics. Whatever the

laws be whereby the nerve-cells transmit movements and maintain communication with each other, and subsequently repeat for themselves, under some inner stimulus (which we may call automatic) past movements and agitations when the object is absent — I say, whatever these laws may be, it cannot be doubted that they exist. How else can we explain dreaming and all involuntary recurrences of past experiences? As a system, these laws or ways of procedure would be called cerebral dynamics, or the dynamics of cerebration. But this would not be the dynamics of mind.

As might be expected *a priori*, there is little doubt that there is unceasing cerebration without consciousness as a concomitant.[1] It is a certain point in the physical process, and under certain conditions that cerebration passes into consciousness.

That cerebrations exist and affect each other, and, without the presence of fresh stimuli from without, set up in the subject a consciousness which is neither the *A* of primary impression nor the *B*, but a resultant and complex *C*, is not incredible — on the contrary, highly probable; nay, may we not say certain? The dynamics of cerebration we may here leave; for little is known about it, and inferences are unfortunately drawn from that little which fill the "non-scientific" and merely metaphysical mind, with amazement.

It is with the action of the environment (including the cerebrum as part of the environment) when it has accomplished the transition into "consciousness" that we are concerned. Here unquestionably, we find a mutual involvement and reciprocity of mind and cerebrum. Cerebration sets up a consciousness, and consciousness or mind, in its turn, sets up a cerebration. It is not a molecular disturbance of nerve-cells which causes a dog to seek water, but the consciousness of thirst that results from that molecular disturbance and which sets in motion the whole motor system with a view to the satisfaction of desire.

[This process whereby consciousness is evoked is always, of course, a cosmic mind process (and consequently reason-implicit) which attains its own

[1] Appendix B.

ends such as they are; but it has to await the next cosmic evolution of mind as will-reason (explicit reason involving self-consciousness) before cosmic can be discriminated and affirmed as reason by reason and for reason.]

Accordingly, the "natural" processes of merely conscious mind resolve themselves into reflex-activities and are to be distinguished as the dynamics of mind as opposed to the higher will-movement, which is the rational of mind. We must recognize, in the fullest sense, the reproduction, fusion and interaction of received experiences and the importance of ascertaining the process whereby mind, apart from the formal activity, builds up aggregate wholes and sequent series.

The area of this or that individual conscious subject is, as a matter of fact, restricted, but we do not doubt that there must reside in reflexive consciousness as such the potentiality of reflexing the whole natural world of which it is a part.

The *conditions* of the possibility of the natural dynamics of, and in, a conscious subject are: reflex-activity, memory, imagination, and comparison. I will call these conditions, because they are not in any strict sense the process itself. The real process itself, as distinguished from the formal or rational process, is absorption of the datum into the substance of the conscious subject—that which is not subject into subject: in other words, the universe of outer and inner sense as far as the subject by its constitution or circumstances can reach.

This process of absorption is generally called Assimilation; an inadequate word. Inadequate, because assimilation means the conversion into its own tissue of that which is identical with it (save numerically); whereas the conscious subject absorbs the object into its substance reflexively, *i. e.*, the object is now truly of the substance of consciousness, *but only* as matter or content to form: the object has not become the subject but only *in* and *for* the subject. Still, it would appear that we must use "assimilation" as there is no other available word—("translation" or transmutation might be misleading). But let us consider this.

When conscious subject finds itself in possession of object it thereafter grows as a one organism of reality by relating fresh reality to the reality already achieved in and for it; just as in the case of plant, or animal, tissue. If a new reality cannot be related, it falls out altogether; or it remains as the negation of the matter already in, or part of, conscious subject: it is held fast by this relation of negation till, by the help of further fresh material, it either becomes a nucleus of a new context of experience or is enabled to relate itself to the already existing content and so contribute to the further growth of the conscious subject as a real. But let us note that a fresh reality which finds a point of attachment in the already existing content of mind is not assimilated to that already existing content, in the sense of simply entering into its identity, or quantitatively enlarging it; but always *preserves its own difference* while organically grafting itself on the content. (Difference in identity is the mode of growth.) Still we may say that the growth of the content of mind as a real is by an assimilative process—certainly not by mere aggregation; for consciousness and its content are not to be likened to a sack full of peas. There are loose peas to be found —much unassimilated material, mere negations of the existing content and context; but the actual growth of the conscious subject as a real is an organic growth (as, for example, in animals), even prior to the emergence of formal reason.

Now, how does this organic growth come about, if it be the case that the conscious subject as a sensational or attuitional entity is merely an absorbent and reflexive "somewhat?" Whence and how the organizing?

I reply, it is organizing so far only as the conscious entity is reflexing what is, in truth, as object, *already* a connected and organized object. Every individual object is related to its own parts and to the whole world either really (innerly) by organic reciprocity or modally (externally) in space and time. In so far then as the content or real of the conscious subject is a truly organic content it is so in proportion to the truth of its reflexive activity.

The actually-existing relation of things, then, which we call an object—the universal object, the receivable world—transfers itself to the conscious subject as an *already related* content or organism so far as the organism is adequate and true; and all of the content in any conscious subject that is not related lies outside the related and organized content in negation awaiting relation. The inner relating (which we call assimilation) of new content to already existing content depends on an already existing outer relation of which it is a copy.

When we consider that, if recipient and passivo-active (reflexive) mind, is to grow at all as an organism, every addition to the organic content must be a difference in identity (just as the Universal Object is a sum of differences in identity), and when we further consider the qualifications with which we must use the term "assimilation," it might be said that the word "association," which begs no question, is after all the best word to use in order to denote the dynamics of mind-growth. Assimilation, however, would still have to be used to denote the crisis of absorption. Association means engrafting, but the graft is not the stock. Accordingly we shall say after this explanation:

*A.* The real process in the dynamic growth of mind as a real is assimilation of presentations from within and without, and the result is "truth" in so far as subject truly reflects the objective reality; but it is only sensational truth—the first moment of true knowledge.

*B.* The formal process in the growth of mind as a real is reason (*i. e.*, Will as dialectic). Of this we have already spoken at sufficient length. Its aim is absolute truth, *i. e.*, the synthesis of experience in its truth—Knowledge.

As I have said, the content of consciousness is not an aggregate of loose peas. There is a running together of those experiences that resemble each other into clumps. And yet it is not correct to speak, as many do, of the growth of the real of mind as always an assimilation of fresh presentations with already existing masses. As I have said above, new material may be received by consciousness which does not admit of being brought

into any save a negative relation to the existing matter of consciousness (just as the primordial experience of the conscious subject must be a negation of itself).

But although the new matter may not be able to force an entrance into the already existing homogeneous masses that constitute the real or body of mind so far as it has yet lived, yet it is not wholly single and isolated; for it finds those elements of the matter of mind which are implicit in all recipience whatsoever ready to give it a welcome, viz., the consciousness of being, of space, and of time. Thus are assigned to the freshest and most refractory experience, being, locality, and position in time, which help to sustain it in its negative isolation until extending experience finds for it connections which raise it from being a single fact or act into a member of a series, the series being determined by likeness. I have heard of a part of the world where the natives never saw a stone or any kind of mineral. Suppose an aërolite to fall: would it not, while refusing all combination with existing experiences, remain fixed in consciousness as a new and isolated experience, memorable *because* of its negation of the existing order of things and endued with the categories of being, place and time?

## CHAPTER III

### ASSIMILATION AS THE REAL PROCESS IN THE DYNAMIC GROWTH OF MIND

What I have said is somewhat general, and I need make no apology for resuming the consideration of assimilation in its more direct educational reference.

Within the region of (merely) conscious or attuitional mind, we are still, I have explained, within the sphere of natural action, reaction, and reciprocity. The whole question is one of mental physics, by which I mean natural processes of a cosmic character with which Will does not interfere. Mind has not yet attained to inhibitive, predictive, or regulative energy.[1] If this be so,

[1] The semblances of this Will or reason regulation in animal instinct are the result of certain innate impulses, concrete aptitudes, association and reflex activity all combined with imitation.

then there is such a thing as the natural dynamics of conscious mind (traversed by the dynamics of material cerebration, to which latter we have already referred). It is the next stage or plane of mind that is distinguished by a notable evolutionary advance — the emergence of Will, and consequent self-consciousness; this profoundly modifies the natural dynamics both of conscious mind and of cerebration, and directs all to ends. This with its form of movement constitutes Reason.

In the sphere of sensational or attuitional consciousness, before will or the energy of pure reason emerges at all, mind, as I have pointed out, has a way of procedure whereby the material which it receives from without and within the bodily organism are built up or fused into a kind of bastard (attuitional) knowledge, as in the case of animals and children. A natural process goes on which is in many respects curiously analogous to the higher process of reason itself, but differs in this respect, that the pure energy of will as formal reason is not there, but natural mind-forces alone. It is unselfconscious mind, and as such is adequate to the adaptation of an organism to its environment; but not for thought or knowledge proper. This dynamic process, like all the processes of nature when abstractly conceived, might correctly enough be called "formal;" but this might lead to a confounding of what transacts itself on the lower plane of mind-life with the self-directed energy of the rational and self-conscious center which we call man-mind as differentiated from all other and lower kinds of mind. For this reason and because the processes are natural, like the processes of growth in a tree or the inter-actions of the cerebrum, we call them "dynamic" rather than formal; and the whole result within this sphere is, accordingly, to be viewed as the dynamical upbuilding of mind as a real. This dynamical process is always going on; but when Will enters it disturbs the natural process, raising it to a higher mind-plane by directing it to certain ends which ends are knowledge and truth. This it does under the impulse of the "Form of End" which is the final moment and permanent stimulus and spring of Will.

Let us now try to follow the dynamic process as explained in the preceding chapter: Given a body or mass of assimilated experiences[1] called *a b c d*, a new sensational experience *e* makes its appearance as a negation of this mass (a difference) and several things are now to be noted (which have been already indicated) as necessary to the entering of *e* into the *real* fabric of mind.

(1) The new experience *e* must be a separate and single. If it present itself as *e x y z* conscious mind rejects it as an indefinite "somewhat," and it quickly vanishes altogether into nonentity. It must be a single if it is to be granted admission to the existing mass; although it is true this single is almost always a single total or whole whose elements are as yet undivided in sense-perception.

(2) If the new single *e* (appearing as a difference from and negation of the mass *a b c d*) finds in the mass a point of relation and identity, it is assimilated into that mass and enters into the organic structure of the mind-real. It thus, further, shares the stability and permanence of *a b c d* and is henceforth remembered along with *a b c d* as now constituting a part of it. The difference, *e*, remains a difference, but in association or community of identity with *a b c d:* this is dynamic integration.

(3) If the new single, *e*, finds no community or identity with *a b c d*, it stands out in consciousness as a negation of the existing matter of mind. It is related only to the universal conditions of sense, viz., being, place and time, but otherwise stands in isolation, awaiting the support of fresh material whereby it may be woven into the organic real of mind. The existing mass of material in mind cannot suggest this isolated *e* when it has passed from the field of immediate vision; and, if the impression be not frequently renewed, *e* will drop from the memory altogether. It has nothing in the existing mass of *a b c d* to

[1] As regards the primary and rudimentary experience we may say that object and subject are lost in the sameness of indifference: this is the stage of Feeling. The frequent repetition of presentations at last gives rise to the necessary reflex action and there is a disruption into two, object and subject, and experience *ipso facto* begins as a negation of subject.

hold on to. It is cast out as an alien thing. It is the sensation of identity in difference which constitutes the organic process and it is the sensation of difference in identity that makes growth possible.

NOTE ON COMPARISON.—Whether comparison be strictly part of the dynamic process or not, it is evident that without comparison the dynamic process could not go on. For there must be a primary capacity to 'sense' the likeness and unlikeness of presentations. And this again involves the co-existence of presentations, in the conscious subject, as felt to be like or unlike each other; and constitutes *sensational* comparison.

(4) The result of the assimilation and fusing of particular new experiences into an already existing mass or series might be called a crude sensational general concept, based on likenesses which have not yet been criticised by being subjected to the analytico-synthetic activity of Will-reason.

(5)[1] When reason operates, and, separating *e*, affirms it as a negation of *a b c d* this fact of affirmed negation, which has lifted us out of the sphere of involuntary dynamics, makes *e* more permanent, and there is thus started a new isolated fact which affords a fresh assimilative center. But this self-conscious activity contains the purpose of affirmation and judgment and cannot be expected from the young mind. What we thus affirm is not simply *e*, but *e* as negating the existing mass of mind-material. There is, in truth, a negative relation of *e* to all else in consciousness. With this pure activity of perception and affirmation we have passed beyond the limits of sensational or attuitional mind. Empirical psychology has now become rational psychology, *i. e.*, the psychology of the reason-movement in itself, and, further, in its transforming influence on the unsifted content of attuitional mind. The mere dynamic of mind can, however, never be lost sight of, because through it we get all the raw material of inner and outer experience; but it is no longer the mere dynamic. If we do not observe this distinction, psychology is a mass of confusion.

NOTE.—The Herbartian, not content with the more thorough elaboration

[1] This is an anticipation necessary for clearness.

of the old doctrine of assimilation, will tell us that the training and discipline of the formal activity is of little, if any, value. There can be no doubt that, in the words of Professor De Garmo,[1] the teacher "must select his material of instruction with respect to ultimate purposes and the pupil's comprehending power: he must arrange the subject-matter not only with respect to the pupil's acquired experience, but also with respect to that which he is going to acquire, *i. e.*, the studies must be brought into the best coördinate relation with one another, and he must adapt his teaching processes so as to secure the quickest apprehension and longest retention of the matter taught." Nay, I would add, he must follow the time-honored rule of basing new experience on old experience in every successive lesson on any particular subject and construct his series of lessons on this general principle. But to omit from consideration those characteristics of the human mind which constitute it a human mind — the pure formal activity — is to ignore the whole question of discipline as opposed to mere instruction and training, and would result in giving us men and women of a very flabby texture — both intellectual and moral. To speak of Herbartian psychology as "the concrete psychology of experience" to the exclusion of a rational psychology which exalts, as it ought to exalt, the formal Will-reason, is to mistake the meaning of the word "concrete" in modern philosophy. The concrete in my mind or yours at this moment is the result of experience acted on and formed to an end, which is truth, by the will as reason. And, if we are to give vigor to intellectual operations and strength to moral character, it is this will-reason which we must never lose sight of. The whole world of the real even after the fusion and inter-action effected by the involuntary dynamic process is even then at best only a mere pulp which has to be made into paper. And if reason has only partially operated, it is opinion not knowledge.

### EDUCATIONAL REFERENCE OF THE ABOVE

If the above analysis exhibits the dynamic of mind as a real and if it be the fact that the growth of mind in the young is a dynamic (sensational or attuitional) process much more than it can be a formal reason process, it is evident that we have to trust to the frequent presentation of material to the young mind more than to spontaneous energy on its part with the purpose of acquisition in it. But, inasmuch as truth, or true knowledge, is the outcome of the spontaneous energy of will exercised on material, we ought to promote this activity in every way we can, taking care not to expect more than tender

[1] *Herbart and the Herbartians*, 1895, p. 33.

years and uncertain growth justify us in expecting. Nature has its own purposes to serve in so ordering that there shall be an age during which the absorption of the material of future knowledge shall be the dominant need. And let us not be disappointed if some children are slow of developing formal self-directing reason. Nay, we may have cause even to regret a premature manifestation of the energy whereby material is coördinated. For no high farming can ultimately yield a good harvest in a soil that has not been enriched to begin with. Our experience of different types of men will satisfy us of this.

But remember that the child is not dependent on you the teacher, for the content of his mind. That has been drawn from numerous sources, and do not be too much afraid therefore of introducing a new fact of experience. It will hook on somewhere and somehow. Can anything be more pedantic than some of the model Herbartian lessons! They would weary the brain of an imbecile by their condescension, and break the mind of the teacher into such little pieces as to endanger his reason. This is method run to seed. Moreover, it is based on a false psychology. We have to remember that the dynamic assimilative process is not the whole; but that each child is, essentially, and from the beginning, a will seizing and coördinating for itself with a purpose of knowledge, and that this has to be taken acccount of, if there is to be growth. Assume effort and activity on the pupil's part according to his age. If you do not do so, you weaken both his intellectual and moral fiber.

With these general remarks let us note the principles of method which the dynamic mind-process yields.

(1) *Present one new thing at a time.*

This principle is of wide application. For example, do not begin two languages at the same time. Do not teach the history or geography of different countries at the same time. Do not teach two grammatical rules in the same lesson. Do not try to correct two moral defects at the same time: and so on.

(2) By questioning and revision connect the new thing with

the existing mass of experiences so as to quicken the natural dynamic of mind.

This principle is also of wide application. For example, Do not teach the geography or history of even your own country save in relation to the geography and life of the parish and home. Do not teach a new letter of the alphabet save by comparison with those already acquired. Do not attempt a foreign language save on the basis of the native language and grammar. Do not teach a new proposition in geometry save in relation to all that has gone before. So with arithmetic, science, etc.

The above is unquestionably the right course of procedure; but do not think it necessary to avoid all new instruction because it is isolated and unrelatable (save negatively) to existing knowledge; but let this be done sparingly and without insistence.

(3) Be patient; for natural processes will not be hurried or abridged.

Some inadvertently speak of assimilation in its educational reference as if a new experience can become a possession only through likeness or affinity to certain material already existing in the mind. This, however, it would now appear, is not a full account of the event. It is manifest that experience $a^2$, presented to experience *a*, would increase the stock only quantitatively; it is through likeness in unlikeness (identity in difference) that experience of the world builds itself up in the animal and infant mind. This is a qualitative increment. It is through *b*, *c*, and *d*, that experience builds itself up on the foundation *a*. At the same time the facility, rapidity and certainty of the acquisition of the new presentation is almost immeasurably greater if there be in the new experience a mere repetition of experiences already deposited—in short, if the new presentation is not *b* in its isolation, but *a b*. For example, if a dog or an infant saw a sword for the first time and had never seen even a knife, the sword would be *b* as an isolated fact, and if it remained in consciousness at all it would do so as a negation of all previous experience, and it would have only external associations of space and time to support it. It

would have to wait for the gradual growth in the mind of other facts related to it before it could enter into the texture or tissue of consciousness as an organic part of its possessions. But if the dog or infant is already familiar with a carving knife, the sword is then no longer *b* to them, but *a b*, and it is at once assimilated as unlikeness in likeness, *i. e.*, built into the organism of mind; especially if I ask the child the uses of a carving knife, and out of this, and on the basis of this, explain the uses of a sword. For, the general rule is that the mind assimilates new material only to the extent that there is already existing material into which it can, through likeness, be absorbed or inwoven.

To take another example: If you try to teach the beast hippopotamus to a child who never saw any animal bigger than a cat, you will utterly fail. If you present a graphic picture of a hippopotamus to the same child, the four legs at least will be an element of likeness to a cat, but it will be so inadequate a basis of likeness that your picture of a hippopotamus will virtually be *b*, not *a b*, and will stand out in negative isolation in the mind of the child waiting for further experiences, *e. g.*, dogs, oxen, rhinoceroses, elephants, before the hippopotamus fully enters in and remains. If he had had these experiences before you brought the hippopotamus to his attention, he might have assimilated the hippopotamus even without a picture of it, if you had first called on his imagination to give you a description of one or two beasts most like to it.

It is at once clear from the above that if we are to engage the attention and interest of the young in what we may desire them to know, the following rules must be observed as flowing from our analysis:

*Rule 1.* Teach nothing as an isolated unit of fact. If you cannot relate it really, relate it externally (space or time).

*Rule 2.* Present new knowledge to a pupil in such a way that it will relate itself, or fit into, knowledge already possessed, (*i. e.*, like in its unlikeness), if you wish the new to be accepted and assimilated. Build up knowledge as a real connected whole in each department of study.

*Corollary.*—In giving new lessons on a subject always go back on what has been already taught, *i. e.*, prepare the mind of the pupil for the lesson.

But this is by no means the whole of the educational lesson that is taught. For inasmuch as it is the relations of things in respect of time, place, likeness and unlikeness, by which the fabric of mind is naturally and dynamically built up, the teacher has to take advantage of this fact to extend the relations of the lessons which he teaches in so far as these relations are relevant to the subject. Let me take a simple illustration. In the infant school I give an object lesson on tea, and content myself with showing tea and relating it to, let us say, China (as yet a mere name), and to its uses, and to its differences or likenesses to other beverages familiar to the children. In the stage above the infant school I relate the tea leaves to the plant of which they are the leaves, the countries where the plant grows, the climatic conditions, the way in which it is brought to this country, other beverages, etc., in more detail than in the infant school.

I thus, by my intervention, help the boy to extend the relational system (so to speak) which has tea for its center, and so I largely increase, in a quite relevant and natural way, the substance of his mind. So with other subjects or objects. This is teaching. Education is an extensive as well as intensive process, and by extending the intellectual horizon I stimulate activity of mind for further acquisition all round, besides adding to the amount of assimilated material which will find itself from day to day coming into touch with fresh material and at once absorbing it.

It is to be held accordingly that, if we would follow nature, our teaching must be relational, not merely in the way of our presenting a new thing or thought, but *so* that what is taught should be made the starting point for extending an acquaintance with further relations as yet unknown. We should deliberately foster the natural operation of mind in building itself up by bringing the absent within its range. If we do not do this, we so far forego our duty as instructors by leaving nature to itself

—a pretty notion, doubtless, but suicidal in the case of the school.

There is in the growth of mind a Relational stage—that is to say, a period when the mind not only is conscious of relations (which it always is), but is actively *looking out for* relations with a view to the extension of its material. Consequently, we have this further principle in education, yielded by this instinct and mode of growth, viz.:

*Relate your various teachings as much as possible, enriching them with as many relevant associations as possible.*

The lesson in the reading-book is merely a starting point for an intelligent conversation.

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(To be Continued.)

## THE TEACHING OF ECONOMICS IN THE SECONDARY SCHOOLS[1]

THE designation, "People's College," gives expression to the fundamental purpose of the high school. Its primary function is training for citizenship. It only secondarily prepares young men and women for college. Insistence upon this idea entails a necessity for modification and betterment of high-school courses in several directions.

I have not the opportunity even to suggest ways in which the courses should be generally modified in order to meet the purpose for which these schools were established. This paper will be confined to the advocacy of a more extended and rational teaching of economics as an essential part of the high-school curriculum.

That the subject has been seriously neglected in the high schools of the country is shown by the fact that political economy is taught in only about one-twentieth of the schools that reported to the Committee of Ten, and that many schools which earlier included the study in their courses have found it unsatisfactory and have abandoned it. We seek naturally a reason for the neglect of a subject so essential to complete civic training. We find that the majority of those who teach it have no conception of its vital character, have had no training themselves in economic thinking, and are obliged therefore to limit the instruction to routine work with a text-book, assigning a daily stint of wearisome definitions and principles which convey no impression of the thoroughly practical character of the study. Is it any wonder that the subject is so often considered dry and uninteresting, and is it surprising that its principles are thought to be beyond the reach of high-school students?

The study must be made more practical, more real, more

[1] Paper read before the Michigan Schoolmasters' Club.

human. The most serious obstacle to the immediate realization of any plans for improvement is the lack of suitable instructors, and, to be sure, were this obstacle removed there would be no necessity for this paper at all. Were the high schools in possession of well-equipped teachers, trained in habits of sound economic thinking, we could safely leave it to individual instructors to work out the problem in their own way. But with the teaching force in the majority of the high schools seriously inadequate, we cannot expect for many years to come that a study introduced into the high-school curriculum within recent years, the importance of which is not yet appreciated, shall secure special teachers for its work. As long as the impression prevails among the body of our citizens that a knowledge of economic principles and problems and sound reasoning upon them come by intuition, not by study, just so long must we expect to have the subject taught by persons with little training and with but a faint conception of the importance of their task.

A second obstacle less serious in character is the lack of proper guides to rational methods of teaching. Books of some sort are desirable, but the text-book plan is objectionable, if by a text-book is meant a formal systematic treatise upon the whole subject of political economy. The strongest argument against the text-book plan is that it has not stood the test of practical experience. In the nature of the case a text-book of a size convenient for high school use can contain nothing but the barest statement of definitions and principles, and unless life is infused into these principles by the teacher, the work is without result. The teacher accomplishes nothing unless he shakes himself free from the restraints of the text-book and makes the subject live by bringing it into relation with everyday affairs. A guide to the teacher, and reference books of various kinds are valuable, but, in the absence of these, many books should be employed in class exercises rather than one. The high-school library plan which has proved so successful in many lines is the one to be adopted here.

The suggestion that formal text-books in political economy be abandened prepares the way for the statement that teachers must not expect to present the science of political economy as a completed whole to the high-school student. He must content himself with instruction in fundamental principles. He cannot hope to present economic questions in all their intricacies and complications. It is hardly to be expected that the young minds can grasp the more intricate problems, can make all modifications and concessions necessary to accuracy of statement in describing the working of economic forces. They can grasp, however, the simpler problems, and obtain valuable training from their consideration if the subject-matter is presented in a way that is interesting and stimulating.

We come then to consider the question of method. It is my feeling and experience that better results can be obtained through the teaching of more economic history and less economic theory. For a definition of economic history I am under obligations to Professor Ashley of Harvard University, who says: "Economic history asks what has been the material basis of social existence; how have the necessities and conveniences of human life been produced; by what organization has labor been provided and directed; how have the commodities thus produced been distributed; what have been the institutions resting on this direction and distribution; what changes have taken place in the methods of agriculture, of industry, of trade; can any intelligible development be traced; and if so, has it been from worse to better?"

The value of historical training in general is so well recognized that it hardly needs defense in this connection. Its application to economics has met with more or less opposition, but an opposition which has been on the whole weak and illogical. Students must be made above all things to realize that economic conclusions are relative to given conditions; that they possess, therefore, only a hypothetical validity. They must be impressed with the fact that the problems upon which we, as citizens, are now engaged did not spring up suddenly out of nothing, but

that they represent a stage in economic development; that they are an outgrowth of past conditions and past problems. They must be taught the proper point of view. They must learn to apply to all phenomena the principle of perspective, and give to every fact its proper place and its just proportion. They cannot be taught properly to appreciate the present great struggle between capital and labor until they have learned something of the way in which private property came into existence, and of the method by which the laborer was stripped of everything except property in himself, as a result of the great inventions and of the industrial revolution of the last century.

Why then study industrial history? Because in the first place the study of the origin and growth of industrial society develops in the student discriminating judgment, broadens his point of view, and enlarges his sympathies. In the second place, industrial history is intimately bound up with present day problems. History is filled with the struggles of economic forces. One ideal has triumphed, another has met defeat. We have the practical illustration of the working of an economic force. Perhaps it is a warning. A fact, an event in history is often a more convincing argument than a book full of theories. In the third place, economic history can be studied systematically and logically. It is complete in itself, and furnishes the student with something which is tangible and capable of being practically applied. He is studying the forces that are touching and influencing his everyday life.

Such a course should consist mainly in a study of English economic history as a basis for the investigation of our own development. It should include a study of primitive industrial conditions in England before the Norman Conquest, followed by a consideration of the manorial system, the growth of towns, the development of a national economic life, the evolution of commerce, the economic misdeeds of Henry VIII, and the economic changes of the sixteenth century, problems of money, poor relief and the like; a history of the changes in methods of agriculture, the great inventions and the industrial revolution of

the last century, the factory acts, the history of trade unionism, and the various problems that have troubled English statesmen during the present century. This should be followed by a consideration of the economic history of our own country in its various phases.

I recognize that the teaching of economic history in advance of economic theory is asserted by many to be criminal pedagogics. Without entering into a discussion of this much-mooted, but far from settled question, it is sufficient here to say that the proposed study of economic history does not contemplate an abandonment of the study of theory, but rather a combined study of the two, the history to be illustrative of the theory, the theory to be evolved from the history. The history, then, should be so handled as at the same time to instruct the students in the important doctrines of the science. I feel confident that students will become more genuinely interested in the subject, and will grasp the principles more readily when they are illustrated by the history at every step. Beginning with economic conditions under the manorial system, and tracing the history through the development of markets and fairs to the appearance of towns and the evolution of a national economic life, the student learns naturally the principles of exchange; the transformation from a system of barter to a money economy; he observes how this exchange system becomes steadily more complicated, and he comes finally to a consideration of the principles underlying international trade. The history of the great Italian banking houses, the Bank of Amsterdam, and the Bank of England gives him an insight into the functions of a bank and the principles underlying the banking system; he compares them with modern banks and their methods. The debasement of the coinage by Henry VIII and other monarchs, the influx of the precious metals into England after the discovery of America present to him in simple form the problem of prices; he has practical illustration of the working of Gresham's law. With the industrial revolution of the last century, he gains an appreciation of the function and power

of capital, of the natural way in which our labor problem has arisen. He sees the meaning of improper distribution, which forms the burden of the socialistic argument against capital.

In the economic history of our own country, the student again finds fundamental economic principles in practical operation. A study of our tariff history gives opportunity to investigate the laws of value, the conditions of production, international trade. The development of the transportation industry illustrates the use of capital, the forms of its organization, and the effect of the corporate organization of industry upon the general question of distribution. We have an abundance of banking and monetary history to assist in the study of the principles of banking and exchange and a sufficiently diversified governmental policy to furnish plenty of data for the study of public finance in all its phases.

This plan is suggested to such high schools as are now giving courses in formal political economy, and is intended as a substitute for such courses.

For those schools which are at present teaching no economics whatever, I would urge a greater attention to economic history in connection with instruction in political history, especially of England and the United States.

It is utterly wrong to treat history as though it were nothing but past politics and to teach political history to the exclusion of other and perhaps more important phases. In a general study of English or American history that phase of the subject in a particular period should receive the most careful treatment which influences most widely the life and development of the people of that period. At one time, it may be the purely political phase; at another, the constitutional; at another, the industrial. The consideration of one phase assists the student to an understanding of other phases, and the study of history will yield the best results only when the various phases of a people's life and progress are given each their proper proportion of attention. A statement of the causes of the Hundred Years' War between France and England, for example, is not complete

unless we take into account the commercial relations which existed at the time between England and Flanders. Wat Tyler's rebellion of 1381 is without significance unless we make a careful study of the life of the peasant class and of the inroads made upon them by the Black Death. The industrial phase of the Tudor period demands careful attention. It is of the utmost importance in the history of the growth of the English people and is a prerequisite to a comprehension of the constitutional changes of the seventeenth century. Again, in the history of the United States, the same principle holds true. One phase of the subject serves to elucidate another. We obtain, for example, an utterly erroneous conception of the slavery question and of the attitude which the southern states assumed if we do not consider the industrial condition of the southern states and the part which slavery played in their entire economic organization.

Such a plan of correlation has been followed by many high-school teachers, and has been found entirely practicable. If consistently followed, it will give the student some insight into economic principles and some conception of the bearing of economic problems.

Having in mind the general plan which I have outlined, I sent circulars some weeks ago to the leading high schools of the northwest and propounded the following questions:

1. Is political economy taught in your high school?

2. If so, what is your opinion concerning a change to industrial history?

3. How would you correlate the work with that in history and civics?

4. If political economy is not taught in your high school, would you favor work in industrial history in connection with that in English and American history, and to what extent?

I am in receipt of sixty-three replies from high schools in Michigan, Ohio, Wisconsin, Minnesota, Iowa, Illinois, Missouri, Nebraska, and Colorado. Political economy is taught as a separate subject in forty of these schools. Thirty-three schools from more or less of a change to industrial history; fifteen are

opposed to such a change. Ten schools are now teaching industrial history to a greater or less extent. The schools are practically unanimous in favor of correlating work in industrial history with that in the political history of England and the United States. But two replies were received vigorously defending the teaching of formal political economy in the high school, and these replies were from men who have had special training in economics and who are perhaps justified in making the attempt to teach to a limited number of advanced students the science of political economy as a whole.

This investigation coincides in its results with that instituted by the Committee of Ten and leads inevitably to the same conclusion. The impression with which I began the investigation has become a conviction that under present conditions the formal teaching of political economy in the high schools should be abandoned and I propose as a substitute the plan already presented to you. I have not had it in mind to lay down a definite plan of study, but merely to suggest an outline to be worked out in detail by each instructor with such modifications as seem necessary to meet local conditions and requirements.

Let me add just a word in answer to objections that have been raised. Says one correspondent, "The introduction of a course in industrial history will add one more subject to the already overcrowded high-school course." I desire to call your attention to the fact that this plan does not demand one moment of additional time from the high schools. Where political economy is now taught, industrial history is to take its place. Where political economy is not taught, industrial history is to be treated only in connection with political history and is to supersede some of the less important matter to which attention is now devoted.

Says another. "The plan of work is too difficult for high-school students and the reference books which are given in connection with this paper for high-school reference libraries are too advanced for the grade of students under consideration." This must of course remain somewhat a matter of opinion until it has been settled definitely by experience. However, it is my firm

conviction that any student who is fitted to take up history in a practical and sensible manner can, under proper guidance, grasp the economic principles which the history illustrates, and is in a position to reap the benefits which result from such a study.

Says another, "But we have not the teachers fitted to carry out successfully such a plan." This is a real difficulty and one which constantly confronts those interested in the advancement of historical and economic studies in the secondary schools, and yet I feel that the average teacher in the high school is better prepared to carry out this plan than to attempt a presentation of political economy as a formal science.

To sum up, industrial history as here proposed offers decided advantages for the high-school student over the formal teaching of political economy.

It develops a discriminating judgment, an ability to distinguish the fleeting and the temporary from the permanent forces which determine the character of our civilization. The student has learned to look at the problems critically and to be slow to accept propositions which have not been satisfactorily demonstrated. He has obtained a wide knowledge of economic problems, a knowledge which he can apply to the solution of questions with which he is brought clearly into contact.

But of far greater importance than this he has acquired an attitude of mind, an historical mindedness, which is absolutely essential to the proper performance of his duties as a citizen. The object of the study of economics in the high school should not be primarily to acquire facts. It is not necessary that the student should have economic formulas and principles at his tongue's end. Such catchwords and rules of thumb are apt to prove misleading if they are not supported by some wider knowledge of economic development. It *is* absolutely essential that students should have such a conception of the evolution of economic society as to produce in them a conservatism, a judicial tolerance, a sense of personal responsibility, and hence a saner and calmer treatment of economic questions. It may not be possible, as many insist, to use history directly in the solution

of our present day questions. Conditions change and a plan which was practicable at an earlier stage of economic development, may be of no value now. But the study of economics in its historical development does give that impartiality of judgment and that respect for the opinions of others, which is a prerequisite to the solution of the troublesome questions now confronting us. Without this, the classes can never be brought together and the vital problems which threaten the very existence of the republic can never be solved.

I submit these suggestions, therefore, with the hope of stimulating the study of economics among young men and women, that the rising generation may approach these great industrial questions with a zeal for the truth and in that spirit of charity and liberality which springs from a broad conception of economic development.

Following is a list of books in economic history which should be found in a high-school reference library. I should be glad to make this list more complete and detailed upon the request of any teacher:

ENGLISH AND GENERAL

ASHLEY.—English Industrial History, 2 vols. (Putnams, 1892, 1893.)

CUNNINGHAM.—Growth of English Industry and Commerce. (Cambridge University Press, 1890.) Outlines of English Industrial History. (Macmillan, 1895.)

GIBBINS.—Industrial History of England. (Methuen & Co., London, 1895.) Industrial England: Historical Outlines. (Methuen & Co., 1897.)

THOROLD ROGERS.—Six Centuries of Work and Wages. (Putnams, 1884.) Economic Interprepation of History. (Putnams, 1888.) Industrial and Commercial History of England. (Putnams, 1892.)

HENRY DYER.—Evolution of Industry. (Macmillan, 1895,)

GROSS.—The Gild Merchant, 2 vols. (Clarendon Press, Oxford, 1890.)

SCHMOLLER.—The Mercantile System. (Economic Classics Series. Macmillan, 1896.)

RAND.—Economic History Since 1768. (Waterman & Amee, Cambridge, Mass., 1888.)

GARNIER.—History of the English Landed Interest. (Sonnenschein & Co., 1892.)

TOYNBEE.—Industrial Revolution. (Rivingtons, 1884.)

BRODRICK.—English Land and English Landlords. (Cassell, Galpin & Co., 1881.)

HOWELL.—Conflict of Capital and Labor. (Chotto & Windus, London, 1878.)

FOWLE.—The Poor Law. (Macmillan, 1881.)

WEBB.—History of Trade Unionism. (Longmans, 1894.)

JEVONS.—State in Relation to Labor. (Macmillan, 1882.)

AMERICAN

BOLLES.—Industrial History of the United States. (Norwich, Conn., 1881.)

WRIGHT.—Industrial History of the United States. (Flood & Vincent, 1895.)

LALOR.—Cyclopædia of Political Science. (Rand, McNally & Co., 1882.)

Reports of the United States Department of Labor.

BISHOP.—History of Manufactures, 2 vols. (Young & Co., Philadelphia, 1864.)

WEEDEN.—Economic and Social History of New England. (Houghton, Mifflin & Co., 1891.)

ELY.—Labor Movement in America. (Crowell & Co., 1886.)

TAUSSIG.—Tariff History of the United States. (Putnams, 1892.)

WINES.—Punishment and Reformation. (Crowell & Co., 1895.)

VON HALLE.—Trusts or Industrial Combinations in the United States. (Macmillan, 1895.)

STIMSON.—Handbook to the Labor Law of the United States. (Scribner's, 1896.)

INGLE.—Southern Side-lights. (Crowell & Co., 1896.)

STICKNEY.—The Railroad Problem. (D. D. Merrill, St. Paul, 1891.)

SMITH.—Emigration and Immigration. (Scribner's, 1890.)

GILMAN.—Profit Sharing Between Employer and Employé. (Houghton, Mifflin & Co., 1889.)

JUGLAR.—Brief History of Panics. (Putnams, 1893.)

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## OUTLINE OF A COURSE IN GENERAL PHYSICS[1]

THE outline and suggestions for an elementary course in general physics are based upon the following assumptions:

1. The total time allotted is not less than thirty-six weeks; three periods of one hour each per week being devoted to the class work, and two periods per week of one and one-half to two hours each to be given to the laboratory work.

2. The number of pupils under an instructor at any one time is not to exceed thirty in the class work or twelve in the laboratory.

3. The laboratory periods are not necessarily devoted entirely to experimental work, a part of the time being given to general instruction, discussion of results, and solution of problems.

4. The prerequisites of the course are algebra and plane geometry.

### OUTLINE OF SUBJECTS

NOTE.—Those subjects marked * should be illustrated by experiments in the class room. † are subjects for laboratory experiments, and § should be emphasized by problems.

1. Introduction.
   - (1) Classification of the phenomena or subjects.
   - *(2) Properties of matter.
2. Units and Standards.
   - (1) Distinction between unit and standard.
   - §*(2) The Common and Metric systems of units (mass and length).
   - §†(3) Relation between the fundamental units of both systems.
   - †(4) Methods of measuring length, including the vernier and micrometer screw
3. Pure Motion (Kinematics).
   - (1) Definitions of velocity and acceleration for constant and variable motion.
   - §(2) Uniform motion.

[1] This is the fourth article of the series prepared by the Departmental Examiners of the University of Chicago on the subjects required for admission to the University.

§†*(3) Uniformly accelerated motion—development of formulæ and the special case of falling bodies.
(4) Circular Motion.
*(5) Simple Harmonic Motion.
†*(6) Composition and resolution of motion.

4. Relation between Force, Mass and Motion.
(1) Definitions, names and comparison of units.
*†§(2) General relation between force, mass and acceleration.
§(3) Graphical representation of force.
*†§(4) Composition and resolution of force, including the case of circular motion.
§(5) Gravitation--laws and cases.
*§(6) Center of mass and gravity.
†§(7) Momentum.
*§(8) Moment of a force.

5. Work and Energy.
*(1) Definition and illustrations of work, energy, power, potential and kinetic energy.
†§(2) The units of work, the relation between them, the connection between the work unit and the measurement of energy and power.
§(3) The simple machines.
†(4) The balance—different forms.

6. The Pendulum.
*(1) Definition of simple and compound pendulum.
†§(2) Law of simple pendulum and its interpretation.
†(3) Application of the pendulum to the measure of time and "g."

7. Mechanics of Liquids.
§*(1) Laws of fluid pressure and application.
(2) Compressibility.
*§(3) Principles of floating and immersed bodies.
§†*(4) Density and specific gravity, including hydrometers.
*(5) Siphons and pumps.

8. Mechanics of Gases.
§*(1) Atmospheric pressure in pounds, grams, dynes, c. c., and mm. of mercury.
*(2) Barometers, mercurial and aneroid.
†§*(3) Relation between pressure and volume of a gas.
§*(4) Air pumps and air pump experiments.

9. Capillarity and Surface Tension.
*(1) Phenomena described and illustrated.
†§(2) Value of surface tension from tubes and by direct weighing
*(3) Applications.

10. Elasticity.
    - *(1) Elasticity of volume and elasticity of form (rigidity).
    - *(2) Elastic vibrations, transverse and longitudinal, compression and rarefaction.
    - *(3) Coefficient of elasticity (Young's Modulus).

11. Sound.
    - (1) Nature of sound, source, medium, receiver.
    - §(2) Propagation of sound—formulæ interpreted.
    - *(3) Reflection and refraction.
    - *(4) Properties of sound.
    - *(5) Musical scale and chords.
    - *(6) Vibration of strings.
    - *(7) Method of studying sound vibrations, graphical, and manometric flames.
    - *(8) Resonance.
    - *(9) Doeppler's principle.
    - (10) Musical instruments.

12. Heat.
    - †*(1) Temperature and instruments for measuring temperature.
    - §†*(2) Specific heat, latent heat, and the laws of change of state and modifications, vapors, distillation.
    - †*(3) Expansion and expansion coefficients.
    - *(4) Conduction and convection, phenomena and laws.
    - *§(5) Relation between work and heat, value of the mechanical equivalent, and description of experiments by which it was determined—the steam engine.

13. Radiation (Light and Heat).
    - (1) Introduction to the ether and nature of radiation, classification of ether waves and methods of detection.
    - §(2) Velocity and intensity of radiation.
    - †§*(3) Reflection and refraction, lenses and mirrors, total reflection.
    - *(4) Interference, diffraction, double refraction, and polarization, phenomena illustrated, and the simplest explained.
    - †*(5) Dispersion, spectra, and spectroscope; how the spectroscope is used to determine substances in the laboratory, and the composition of distant bodies.
    - *(6) Optical instruments, including the microscope, telescope. projection lantern, photographic camera, etc.

15. Electro-statics.
    - *(1) Fundamental phenomena.
    - *(2) Electricity and electrification, electric field conduction and dialectics.
    - *(3) Electrification, a form of potential energy, how produced, how detected, kind.

§ * (4) Potential and difference of potential.
§ * (5) Capacity and condensers (defined).
* (6) Electro-static induction.
* (7) The electrophorus and simple electric machines.

16. Current Electricity.
* (1) Fundamental phenomena including field of force about a current.
† § * (2) Electro-motive force, resistance, conductivity, strength of current and Ohm's law — battery cells (simple).
* (3) Units — C. G. S. and practical units of current, resistance and E. M. F.
§ * (4) Joule's law and its applications.
† § * (5) Galvanometers and measuring instruments.
* (6) Electrolysis and electro deposition of metals — primary and secondary batteries treated further.

17. Magnetism and Electro-magnetism.
* (1) Definitions and phenomena of magnetism.
* (2) Force exerted by currents upon each other, and by currents upon magnets ; Ampere's theory of magnetism.
* (3) Effect of magnetic substances placed in the magnetic field about a current ; electro-magnets and application.

18. Electro-magnetic Induction.
* (1) Fundamental phenomena and laws.
* (2) Application including induction coils and phenomena, transformers, motors and dynamos, telephones, etc.

CLASS WORK

The class work should consist of recitations from the text-book, illustrations of the principal phenomena by the instructor, and the solution of problems by the student. The latter is of great importance, as the student often learns definitions and formulæ without appreciating their meaning. The class should occasionally be given written reviews or examinations. The questions used in such examinations should be carefully thought out and expressed in such a way that they become a test of the student's reasoning powers rather than a test of memory. The discipline derived from the clear and concise statement in writing of facts and the logical deductions therefrom is extremely valuable.

The written review brings out the relative progress of the

individuals and often shows that the class as a whole has failed to grasp some important fact. The papers are to be corrected and returned to the student, and it is well to call the attention of the class to the more common errors detected in the answers.

### EXPERIMENTAL WORK

The results sought in experimental work may be classed as follows:

1. Methods of observation and the deduction of laws from the results of observation.
2. Emphasizing and fixing important laws and facts in the mind of the student.
3. Skill in manipulation or handling of apparatus.
4. The proper tabulation of experimental data and results.

The laboratory work should be carefully arranged and the value of each experiment considered in relation to each of the results sought. The number of experiments may vary from fifty to one hundred, depending upon the time allowed for each. A convenient method consists in arranging each experiment to occupy one complete laboratory period. This system permits of the most economical use of the apparatus and the student's time.

The experiments should be quantitative as far as possible and a degree of accuracy attainable such that the student may not lose faith in experimental work.

Great stress should be laid upon quality rather than quantity of work, and careful, accurate work encouraged.

*Laboratory instruction.*—While general instructions and the discussion of results may be taken up by the class as a whole, the greater part of the laboratory instruction is necessarily with the individual, and no instructor should have more students in the laboratory at one time than he can properly care for.

Students should be provided with a blank in duplicate, which contains a place for each observed or constant quantity needed in computing the result: these are filled out as the work progresses and at the end of the period one copy is handed to the instructor, the other, together with a sketch of the apparatus and method, form the student's laboratory notes.

*Record of Experiments.*—The final record of each experiment should be neatly written up from the student's laboratory notes as soon as possible after the experiment is performed and should state clearly, (*a*) the problem to be solved, (*b*) the method, (*c*) the observed and computed results. The sketches necessary should be confined to simple diagrams made with an ordinary ruling pen and compasses; shaded or perspective drawings are not to be permitted.

The tabulation of observed and computed results should be such that they may be readily compared. Whenever possible the results should be plotted in the form of curves.

The paper recommended is a medium weight linen ledger paper, cut in sheets 8 x 10½ inches, cross-ruled on both sides and punched with two holes one-half inch from the longer edge. The sheets are afterwards bound in covers punched to correspond. The ruling should be spaced six lines to the inch which is convenient for writing, tabulation, and curve plotting. Ten lines to the inch or five to the centimeter would be better but paper with lines closer than six to the inch is printed from plates, is expensive, and does not take ink well on the printed lines.

*Laboratory manual.*—Most of the text-books and laboratory manuals designed for an academic course in physics are too elementary in character. The recent text-books, however, are somewhat more advanced and contain many experiments suitable for the laboratory work. In many respects the combined text-book and laboratory manual is preferable. However, the instructor should exercise judgment in the selection of the exercises to be performed by the student in the laboratory; for example, the heating of a wire by an electric current is an experiment to be performed before the class by the instructor as an illustration, while the measurement of the power absorbed by an incandescent lamp is an excellent experiment for the laboratory.

### EQUIPMENT

No school should undertake to give instruction in physics without a teacher well trained in experimental methods and a suitably equipped laboratory.

The instructor should also have at his disposal some simple but effective device for illustrating in the class room every important law or phenomena as it is taken up. A successful instructor will adapt many common and inexpensive articles of trade in devising class room illustrations and laboratory experiments. The list of apparatus for class demonstrations should, however, contain the following pieces of good quality:

A projecting lantern with vertical, spectroscope, and polarscope attachments, an adjustable window mirror for projecting with sunlight, an air pump, induction coil, large electro-magnet, and a source of current; six storage cells charged by a primary battery or from the street main form an admirable source of current for all class and laboratory work.

The laboratory equipment is also largely composed of inexpensive apparatus for definite experiments, but in addition it should contain a good balance with a sensibility of 0.5 m. g. and a capacity of 100 grams, a set of standard weights, a pendulum vibrating seconds (this need not be a clock, a free pendulum with mercury contact will answer), a standard of length, mercurial barometer, a good thermometer, pair of simple measuring microscopes, pair of telescopes of one inch aperture, spectrometer, galvanometer of high sensibility and a set of standard resistances.

No equipment is complete without a work room fitted with a small screw-cutting lathe and lathe tools, vise and bench tools, a few woodworking tools, and a supply of materials, such as sheet metals, wire, rods, hard rubber, wood, nails, screws, binding posts, etc. This part of the equipment is indispensable to the instructor in getting up class illustrations and laboratory apparatus. The class often contains a few students with considerable taste and skill in the use of tools and the instructor usually finds them willing assistants; to such students the construction of simple apparatus is a source of great benefit and delight.

## SCHOOL GOVERNMENT

WHILE the problem of school government is one of the most important in the whole range of school life, it has received but little attention, comparatively, at the hands of educators. If our system of education has failed to reach its highest ideals in the past, our methods of school control have been at least as much to blame as our methods of instruction. Teachers have been so absorbed in their efforts to develop the intellectual life that they have too often neglected the cultivation of the motive powers. The brain has been taught to do its work well, but the will, the supreme endowment of mankind, has been left to work out its own salvation or destruction without direction or training.

Our free-school system was organized expressly to fit the youth of the land to discharge intelligently the duties of citizenship. It was believed by our forefathers, and with reason, that a free government could not be maintained in its integrity without the free school, which was accordingly organized and fostered with the expectation that it would become the corner stone of the great structure of American civilization.

We live in the midst of democratic institutions under a representative government, yet our schools, which are intended to fit the youth of the land to participate intelligently in the various functions of such institutions and government, are essentially undemocratic, and are controlled by a power which is non-representative and, in form at least, autocratic.

The citizens of a political community have a voice through their representatives in the formation and execution of the laws by which they are governed, but the citizens of the school community, for a school is a distinct community by itself, with the interests and latent possibilities, if not with all the functions of the larger community outside, are subjected to a control which

is the very antithesis of a democratic government. And yet men wonder that the rising generation is so poorly fitted to take up and discharge the duties and responsibilities of citizenship. How is it possible to escape the conclusion that political incompetency is the direct and logical outcome of such a condition of affairs?

It is to be noted, farther, that while methods of school government are perceptibly moderating in rigidity and severity, and are becoming liberalized so as to give more freedom of action and a wider range for the development of individual tendencies, the system itself is as yet unchanged in principle and essence. It is still autocratic, although the slave-driver's whip has given place to the gilded scepter.

This state of things cannot continue. Our civilization has reached the point where it demands, not the reformation of the old system, but its abolition, and the adoption of a radically different one. Already "Great Birnam wood is coming to high Dunsinane hill" and Macbeth's reign is ended.

The attention of the educational world is gradually but surely being attracted to this problem, and many attempts are being made to solve it. It is the purpose of this article to describe very briefly an experiment which is being tried in one of our larger high schools along the lines of what has been called, perhaps unfortunately, "Student Control," and which has been accompanied by some results which are interesting, and perhaps significant.

It should be said that the object of this movement is twofold; to teach the pupils to discriminate between right and wrong in their relations to their mates and to the school, and to develop within them the will to do the right and shun the wrong; in other words to substitute a wise and intelligent self-control for a system of external government.

In the main building of the school in which the experiment is being tried more than a thousand pupils, young men and women, ranging from thirteen to twenty-one years of age, are seated in sixteen rooms, including a large assembly hall. The

remaining four hundred, who are seated in another building, have not as yet been included in the new system.

After a somewhat extended discussion of the whole subject with both teachers and students, which made all fairly familiar with the reasons for and motives of the new departure and engaged their more or less active interest, the initial step was taken last May, two months before the close of the year.

After a short trial some changes were found desirable in the details of the plan which is now in operation as follows: Each room elects in regular form a representative to a body, which is partly legislative and partly executive in its functions, called the senate. This body elects a president and secretary, appoints the necessary committees, and assumes control of the order in the halls and of the care of the furniture and building. It formulates a code of laws and appoints a corps of "tribunes" to carry them out. These laws are read to the students in each room, and carefully explained so that the reasons for their adoption and the methods of their enforcement are clearly understood, and then are posted in conspicuous places. Whenever classes are passing through the halls the tribunes are stationed in all the strategic points throughout the building to see that the rules are observed.

The senate also appoints a court of three judges, to whom all cases of law-breaking are reported, and before whom the more serious ones are tried with the customary procedure of prosecution and defense. These judges, very wisely, make their administration reformatory rather than punitive in its purposes, and seldom find it necessary to inflict a penalty.

This, in brief, is the outline of the organization, which is of interest only because of the results which it produces. It will be noticed that this scheme of government is distinctly a representative one, and that each pupil can justly feel that he is an integral part of the system. Moreover, the whole body of the students, with very few exceptions, are intensely loyal to the idea. They take pride in the recognition of their rights, and they also feel that they are individually responsible for the wel-

fare and the good name of the school. As a result of this the old spirit of a forced submission to authority is passing away, and in its place is coming a voluntary submission to the general rules of good behavior as embodied in the laws, which they themselves have made and adopted. And it is especially interesting to observe that these laws are stricter than those under which they lived during the old régime.

When the experiment was begun the senate was told explicitly, that for two months the designated functions of the school would be put unreservedly into their hands, and that neither principal nor teachers would interfere with their administration, either to hinder or to help. This announcement was made with some hesitation, but it was determined to give them an absolutely fair trial, and the result demonstrated the wisdom of the position.

The results, already manifest, are many and far-reaching. They penetrate every function of school life and influence all its relations. There is a better spirit displayed throughout the school and it is the general verdict of the teachers that never before has the control of the class rooms been so easy and it is certain that the number of cases of discipline referred to the principal has materially decreased.

Two important results are evident even to the casual observer. The first is that excellent order is maintained in the halls without any interposition on the part of either principal or teachers. From five to eight hundred students are required to change their rooms at the end of each period and frequently to go from the first to the second or third floor and the reverse. At every turn and on each of the landings stands a serious and dignified boy or girl, and the slightest disorder is promptly but courteously checked. There is no unseemly haste, no conversation or laughter, but each student goes quietly and promptly to his appointed room and the whole change is made in four minutes or less.

The second result is to be noted in the change of disposition. Under the old régime the absence of a teacher from his

post removed all visible restraint and frequently resulted in an outbreak of conversation and laughter, and by some it was even considered quite proper to evade the watchfulness of the teacher and to indulge in forbidden pleasures. The very fact that an arbitrary restraint is imposed upon a person by a superior authority, even though its reasonableness is recognized, will frequently arouse antagonism and inspire a spirit of rebellion. Under the new régime this attitude of mind is disappearing. There seems to be no difference in the general conduct even if no tribune is in sight, and I believe that the present order would be maintained, at least for a time, even if the whole corps of tribunes should be withdrawn. They can hardly be dispensed with, however, because they stand as representatives of the student-body, and are symbols of its authority. Their presence gives a new dignity to school citizenship and is a constant inspiration to everyone who passes by.

One question, which was seriously discussed and which many feared would prove an obstacle to the success of a new system, related to the attitude of a student towards an offender. Under a system of self-government would he be willing to give information, which should lead to the discovery of a law breaker, when that information should be given to the officers, whom he himself had helped to constitute. It was finally decided not to define an issue on this point, nor even to require the students to commit themselves in advance, but to keep still and let the matter take care of itself. And it has been observed with interest that up to the present time no student has refused to give his testimony in any case where the integrity of his institutions was at stake. In general such evidence has been given in a manly and womanly way and no stigma has attached to the witness. If this state of affairs becomes permanent it will prove a strong argument in behalf of the system.

Of course the adoption of this system does not constitute the desired revolution, but it must be expanded and adapted to meet all the contingencies of school life and still further experiments are being continuously tried. The next step has been

taken in connection with the senior class, who sit together in the assembly hall and number about 225. They have been selected both because they are the most serious and mature students in the school and because an exceptional opportunity for the development of this system is offered by the fact that they sit together in one room.

It is impossible as yet to speak definitely of results. The chief features of the organization may be gathered from the following extracts from the constitution, which was drawn up by a committee appointed by the class:

PREAMBLE

We, the students of the Hyde Park High School, sitting in the assembly hall, in order that we may secure training in free government, develop our powers of self-control, and more fully know our relations as individuals to society, do adopt and ordain this constitution as a basis for the student government of the assembly hall.

ARTICLE I. LEGISLATIVE

SECTION 1. All legislative powers herein granted shall be vested in a house of representatives under such restrictions as are herein made.

SEC. 2. The house of representatives shall be composed of representatives elected, one from each district, for a term of twelve school weeks, except as provided in section 3 of this article.

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SEC. 7. The house of representatives shall convene at 2:15 o'clock on the first Monday after the election of its first members, and every second Monday thereafter, and may continue in session as business may require.

SEC. 8. Special sessions may be held at the call of the president of assembly hall.

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SEC. 10. *Clause 1.* The house of representatives may provide that any bill, resolution, order, or other enactment which it may pass, shall be submitted to a popular vote of the students for approval or rejection, and a majority of the votes cast concerning such measure shall determine the result

*Clause 2.* If any measure so submitted shall be approved by the students, it shall take effect as provided, but if any measure so submitted shall not be approved by the students, it shall not have any force.

*Clause 3.* If within three school days after the passage of any bill, resolution, order, or other enactment, fifty students shall petition that such measure be submitted to a popular vote, it shall be so submitted.

*Clause 4.* The house of representatives shall provide for executing the provisions of this section.

SEC. 11. The house of representatives shall elect a clerk from the students of the assembly hall not members of itself, who shall serve for six school weeks, and whose duty it shall be to keep a record of the proceedings of the house of representatives, to safely keep all records and documents belonging to the student government of the assembly hall, and to file all laws and other enactments in an orderly manner.

SEC. 12. The house of representatives shall have power to organize its own committees and make its own rules; to compel the attendance and good behavior of its members by such rules and penalties as it may choose to adopt; to expel by a two-thirds vote of its members any representative whom it may deem to have proven unworthy of the office; to define and provide a penalty for all offenses against the students of the assembly hall; to provide for the general order and interests of the assembly hall; to make such laws and provisions as shall be necessary for exercising the powers herein granted, and for applying all other powers and provisions vested by this constitution in the student government of the assembly hall, or any department or officer thereof; to create and name such executive offices, subordinate to those herein provided for, as it may deem necessary; to organize them and provide for their regulation; to make laws for regulating the elections and determining the public will; to provide for the regulation of the board of chancellors, and for the procedure in all trials before it.

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ARTICLE II. EXECUTIVE

SECTION 1. The executive powers herein granted shall be vested in a president, a supervisor of wardens, and a prosecuting attorney.

SEC. 2. The president shall be elected by popular vote from the students of the assembly hall for a term of eighteen school weeks.

SEC. 3. *Clause 1.* The president shall preside over the sessions of the house of representatives.

*Clause 2.* He shall have the general supervision of the executive department and shall see that the laws are faithfully enforced.

*Clause 3.* He shall have power to nominate, and with the consent of the house of representatives, to appoint the members of the board of chancellors, the supervisor of wardens, the prosecuting attorney and all other officers of the student government of the assembly hall whose appointments are not herein otherwise provided for, and who shall be established by law; but the house of representatives may vest the appointment of such inferior officers as it may think best, in the president alone, in the board of chancellors, or in the head of any department.

* * * * * * * *

*Clause 5.* He shall have power to remove from office for incompetency or neglect of duty the supervisor of wardens, the prosecuting attorney, or any other officer of his appointment, except the members of the board of chancellors, whose removal is not otherwise provided for.

SEC. 4. *Clause 1.* The president or any member of the board of chancellors shall be subject to impeachment, by any twenty-five students sitting in the assembly hall, for neglect of duty or violation of the trust conferred in him.

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SEC. 5. *Clause 1.* The supervisor of wardens shall be appointed by the president, and shall hold office during good behavior and the term of the president.

*Clause 2.* It shall be his duty, with the assistance of his subordinates, to enforce the laws; to apprehend offenders and bring them to trial before the board of chancellors; to assist in the collection of evidence and otherwise promote the prosecution of offenders as the prosecuting attorney may require; to execute such provisions as may be made for the general order and welfare of the assembly hall.

SEC. 6. *Clause 1.* The prosecuting attorney shall be appointed by the president, and shall hold office during good behavior and the term of the president.

*Clause 2.* It shall be his duty to look after the interests of the students of the assembly hall in all causes before the board of chancellors; to see that all apprehended offenders are prosecuted; to execute any provisions, orders or instructions which the house of representatives may entrust to him.

## ARTICLE III. JUDICIAL

SECTION 1. The judicial powers herein granted shall be vested in a board of chancellors, which shall consist of five members appointed by the president.

SEC. 2. Each member of the board of chancellors shall hold office during his good behavior.

SEC. 3. Three members of the board of chancellors shall sit at each and every judicial session as a court to try and determine all causes within the jurisdiction of this government.

SEC. 4. The member first appointed to the board of chancellors by the president as herein provided shall be the presiding chancellor and shall sit at all sessions of the board.

SEC. 5. Two members of the board of chancellors shall sit at each session of the board as associate chancellors.

SEC. 6. The sittings of the associate chancellors at the sessions of the board of chancellors shall be so apportioned by law that no associate chancellor shall sit at more than two consecutive sessions.

In order to show the sentiment of the school the following selections are copied from editorials which have appeared in the school paper, *The White and Blue*, and which have in no way been inspired by either principal or teachers :

Whatever else anyone may wish to add, all will probably concede that education is designed to prepare a person for his life's occupations and duties. In this country one important duty of every citizen is to take his place in the political organization. In view of this, those who are promoting the movement for student control, contend that the public school ought to include practical training in the affairs of the government as well as the study of the theory. Unfortunately for this contention some erroneous ideas have gotten into circulation. It does not mean, as some have inferred, that the student body has a right to manage its own discipline ; that the present form of government by the faculty, because it is autocratic, is unjust and an imposition upon the students. The relation of the faculty to the student is primarily that of trainers. Its object is to develop the powers that are within the student, and among these is the power of self-control, in the individual, or self-government when applied to society. So, just as the instructor aims, as far as possible, to draw from the student himself the conclusion which he wishes to present, and develop the student's power for independent thought, in like manner, student control purposes to teach by actual experience the precepts of government, and to develop in the student body, in the gymnasium of practice, the powers of self-government as society. It is yet a question for experience to answer, what is the period in the life of the student at which he is prepared to have the external restraining influences, which have directed his growth, removed, and to stand on his own resources and control his conduct by that which is within him.

At the close of this school year, Hyde Park ought to look back upon a fair test of student government, and, if its success reaches the point indicated for it, upon a suitable system adopted with a view to permanency. The trial of last term disclosed several helpful facts, and seemed to justify a gradual development of the plan. That experiment gave an opportunity for all parties to try the idea. The conclusion of most of the students and teachers was favorable, and their expectation is that we shall continue.

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There is a present duty, however, for everyone who has faith in the object of the movement and who hopes for its final triumph. He owes obedience to the rules and respect for the students' officials. The influence of his example is demanded on the side of order, and whatever force he can exert ought to be spent in clearing up any misunderstandings that may be held by those who are not acquainted with the purpose. It is expected, further, that everyone, whatever he may think of the merits of the idea, will

at least not hinder a fair trial, and will give the proposition the consideration which it deserves.

The belief in student control is becoming more and more recognized and emphasized, and today the educational world awaits with interest the conclusions that are to be drawn from the experiments now in operation in so many schools throughout the country.

"We have finally arrived at the conviction — although we have been tardy in reaching it,—" says President Edward G. Halle of the Board of Education, "that the child is an entity and not an incident," in the school life.

Truly such is the case. You and I are living as real a life in our intercourse at school today, as we possibly can when we have passed without its kindly portals.

It is only in learning how to control ourselves, to feel ourselves responsible for our own acts, that we can hope to elevate the citizenship of our country; and, if the schools teach but one thing to the youth of our land, let that thing be the appreciation of higher citizenship.

And this all important fact is to be taught through discipline; not the school discipline of fifty years ago, which enforced obedience to red-tape regulation of teachers and boards of education, by the dread of the birch rod, but by instilling into the mind of the student the true relation of discipline to our moral education.

Make the student feel that he is as much a part of the school as his teacher, as important to its existence and maintenance as its faculty, and you will awaken in him a feeling of intense interest for the school, its work, and success, and a true appreciation of the moral responsibilities of life.

Let the school be the laboratory, with student control as the apparatus for the scholar to perform his first experiments in moral development; for, if moral appreciation inspires moral practice, moral practice will assuredly beget moral appreciation.

In conclusion it only remains to be said that this experiment was undertaken with much doubt and with some hesitation, but with the firm conviction that some system of the kind must be adopted in the near future. The results, however, have far exceeded our expectations, if not our hopes, and the belief that the new departure, when wisely organized and fully developed would work an important revolution in school life, has become almost a certainty.

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# BOOK REVIEWS

*The Timon of Lucian.* Edited by J. B. SEWALL. School Classics. Ginn & Co.

TEACHERS of Greek in preparatory schools have reason to be glad that fortune has provided for beginners so interesting a book as the *Anabasis*. Yet it is well, even in the first years, to give the pupil some glimpse into the wide ranges of Greek literature in which hoplites play no part. I have recently read the *Timon* of Lucian, in Mr. Sewall's edition, with a class which had previously read about 125 pages of *Xenophon*. Lucian is not to be recommended for extensive reading in the preparatory school. Young people should be fed upon direct rather than allusive literature; upon the original poem rather than the parody; upon the inspired utterance of the believer rather than the gibe of the skeptic. I am not sure that it was a good thing for my class to begin Homer with the first sentence of the *Timon* in their minds: "O Zeus, god of friendship and hospitality, and fellowship and domesticity and fidelity, wielder of the lightning, cloud-gatherer, loud-thunderer, and *whatever else the stupid poets call thee, more especially when their metres bother them — for then thou becomest a god of many titles and so fillest up the gaps in their verse!*" For an occasional relish, however, there is nothing so piquant and stimulating to the young student as Lucian: His humor and vivacity and inventiveness keep the reader wide awake.

I found that Mr. Sewall's notes and vocabulary were not sufficient for my class. Several obscurities, especially in the first part, are passed without comment. *E. g.*, the definition of ἄτε in the vocabulary throws no light upon its force in the quotation from Pindar. The peculiar sense of ὅσα in § 54 is nowhere explained. Ἧς βούλει in the sense of *cuiusvis* was new to my pupils. I think they had never before seen αὐτῷ (§ 57) used as reflexive of the second person. The use of δέ in apodosis is so rare in *Xenophon* that a note would have been in point.

On the other hand, there are several superfluous notes. The

remark about the imperfect tense is a mere truism to any pupil advanced enough to read *Timon*. It was not worth while to give just one note in phonetics and one in text variation, the points selected being of no especial importance. Hymettus is located at least three times, though Parnassus is left to take care of itself. Not less than five times is the student advised to translate a Greek participle and verb by two verbs connected by *and*. The definition of ἐσχατιά given in the vocabulary is quoted in full in the notes.

I note several inconsistencies between notes on the same topic, or between notes and vocabulary. On the first page we are told that Lucian freely uses μή for οὐ, yet the note on p. 39 implies that his usage is accurate. χρόνιος, rendered *late* in the vocabulary, in the note becomes *in the nick of time*—which is not the meaning.

The note on πρίν is bad, "πρίν meaning *before* after an affirmative allows an infinitive." This implies that the infinitive is merely allowed whereas it is the usual construction; and that the meaning *before* is sometimes absent from πρίν. Mr. Sewall seems to regard the participle as an infinitive, since he frequently opposes the term to *finite verb* or *finite clause*. In § 15 οὐ καὶ is rendered as if it were καὶ οὐ. ὀλίγα in § 28 is in the nominative case, not the accusative, and means *few*, not *little*.

There are several errors in the vocabulary. ἅμα does not mean *once*. γάρ does not mean "*otherwise*, in the conclusion of conditional sentences contrary to fact." In § 7 *otherwise* is implied in the context, and γάρ has its usual meaning. εὐαδίκητος is rendered *liable to do wrong*, through misunderstanding of the definition in Liddel and Scott, *liable to wrong, i. e., exposed to injustice*. The Diasia occurred once a year, not twice. ἀναγιγνώσκω in § 5 means *read*. Under ἀγαπάω the rendering *be content* should be added for § 12.

The English of the notes and vocabulary is sometimes slovenly. The note on ἄν in the vocabulary is a mere jumble of words. "The infinitive represents the flood as sufficient to produce the end rather *than stating* it as a fact." "Jacobitz, as well as Fritzche, follow Hemsterhuis."

There are some misprints, but none likely to give trouble except ἀπο δῶ (§ 32) for ἀπο δῷ.

Sections 16 and 17 might well have been omitted without comment.

FRANK M. BRONSON

THE MORGAN PARK ACADEMY

*The Lives of Cornelius Nepos.* By THOMAS B. LINDSAY. American Book Co.

IF the signs at present observable in the field of first Latin reading are indicative of anything, they point to the partial abandonment of Cæsar as the first author to be read. Teachers have long felt that Cæsar, writing in a style admirably adapted to his purpose but presenting extraordinary difficulties to the beginner in Latin, belongs to a later period of study. Aside from the difficulty of understanding Cæsar, the young pupil finds Orgetorix and Ariovistus uninteresting, as too indirectly connected with the civilized world to appeal to his narrow historical imagination; nor does Cæsar's masterly stratagem rouse in him the enthusiasm that a well told account of the exploits of a modern general would unfailingly excite.

What has kept Cæsar in his anomalous position as first Latin author put into the hands of students is, probably, the unquestioned purity of his style. The abundant and convenient editions that have resulted from his general adoption in schools make the change to another author, or to selections from Cæsar and other authors, somewhat slow, even if teachers of second year Latin are agreed that the change is advisable. The change, also, involves the question, What shall be substituted if we give up Cæsar?

Of late certain efforts have been made to gather into one volume selections from the easier Latin authors, Eutropius, Aulus, Gellius and others, and these have met with an encouraging reception from teachers. Lhomond's simplification of the historians called *Viri Romae* has been reëdited. Lastly, the fragment of Nepos's works remaining to us has put forth its claim as suitable material for beginners—a claim, indeed, already recognized by several colleges through requirements for admission.

Teuffel says of Nepos' *De Viris Illustribus* that "the parts we possess of it, the work *De Excellentibus Ducibus Exterarum Gentium* and the biographies of Atticus (being an extract from his work *De Historicis Latinis*) show neither historical criticism nor perfection of style, but in the absence of better sources are often valuable and deserve praise for their lucidity of arrangement and an unpretentious tone."

While it is undoubtedly true that Nepos is by no means the peer of Cæsar in style, his Latin is unmistakably that of the classic period

of Roman literature and is sufficiently good for the beginner. That he sadly confuses Miltiades, the conqueror of the Persians at Marathon, with Miltiades, the colonist, does not detract from the interest excited by his enthusiastic *Life of Miltiades*. The perennial interest we all feel in anecdote makes his often trivial tales an excellent incentive to the young reader to wrest the meaning from the text. The teacher who has driven pupils through Cæsar can alone adequately appreciate the value of more inviting text matter.

The edition of Nepos edited by Professor Lindsay puts this author into the class room in the most practical shape. A concise introduction gives all that we know of Nepos and of his writings, with a short criticism upon his style and the historical value of his work. The well-known German authorities are named and Lupus and Grote are suggested for reference. Under the title, "Hints for Reading," Professor Lindsay preaches the true doctrine of how to learn to read and understand; to the machine teacher of Latin (alas for his frequency), unless he immediately mends his way, this section will be a reproach as often as he uses the volume. "Special exercises" have the merit of brevity. They evidently are intended merely as a guide to systematize grammar study. An excellent map of the Roman Empire, with enlargements of Greece and the Chersonnesus, introduces us to the text. This text leaves nothing to be desired so far as the type work is concerned. But why must the confusing small figures hash up the text before the eyes of the pupil at the very stage of his progress when the habit of seizing the sentence as a whole must, if ever, be formed? A little ingenuity would save the text from this nuisance without sacrificing clearness of grammatical reference. In future editions of this really excellent text-book, it is to be hoped that this blemish will be removed. The running argument, on the contrary, aids the pupil in grasping the meaning of the paragraphs. Marginal dates, also, are useful.

Professor Lindsay's notes are remarkably clear, well directed and easy of reference. The only objection to them is the amount of comparative philology they contain. A safe rule for notes in editions for beginners is not to put anything into them that will puzzle and call away the attention from the actually needed help. A special set of notes for the teacher would add little to the bulk of the book and would remove temptation. The same criticism applies to the otherwise model vocabulary. To put after *muntius*, "*cf. novus*" is bad

vocabulary work but a good suggestion to the teacher. The pupil can hardly supply the obsolete *novère* which leads through a supposed *noventius* to the work *nuntius*.

According to the fancy of the day, the hidden quantities, as well as the obvious quantities, are marked throughout. Professor Lindsay follows Marx in writing *cognosco* and *agnosco*, although there is no support for this quantity in words in which the *gn* is not part of a termination, but results from assimilation of a preposition with a short vowel.

On the whole Lindsays's Nepos is a singularly good text-book. If Nepos is not to hold his own in the favor of teachers of Latin, it will not be because there is not at least one edition of his works that may be put into the hands of pupils with perfect confidence in its scholarship and its wise and adequate assistance to the student.

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*Select Orations of Cicero.* GREENOUGH and KITTREDGE. Ginn & Co.

GREENOUGH and Kittredge's New Cicero is an attractive book. Printer and binder together have succeeded in producing a very creditable piece of work. An especially commendable feature is its wealth of illustration. Here the editors have shown rare good sense by inserting restorations as well as ruins, thus assisting the imagination to form an approximately correct idea of the Forum, and of the temple of Jupiter—an utter impossibility for the average mind if the existing ruins only are shown. On the other hand, it would have been wise to have omitted several of the portraits of distinguished Romans. For instance, on page 77 the great Lucullus, in a bust of admittedly uncertain identification, has every appearance of having eaten too many fried oysters for his comfort. And it would require a powerful imagination to discover any traces of the magnificent strength and imperious will that characterized the conqueror of Hannibal in the weak and melancholy face labeled Scipio Africanus on page 152. Several other coin portraits are nothing but caricatures, and do not deserve a place in a book containing such admirable pictures as those of Hortensius, Cæsar, and Octavianus.

The *Introduction* leaves very little to be desired. The life of Cicero is given in detail and is extremely interesting. Special emphasis is

laid, not only here, but all through the book, upon Roman oratory in general, and upon Cicero's oratory in particular, and the pupil is encouraged in every way to study the orations from this standpoint. The value of such study in the acquisition of a forcible English style cannot be overestimated. A footnote on page xxxix reveals the startling fact that a boy orator was not wanting even in Cicero's time, inasmuch as C. Licinius Calvus, the representation of "the extreme Attic school," died before he was fifteen years old. But we are inclined to think that this is a typographical error.

The outline of the *Roman Constitution* is very scholarly, and gives valuable information in a concise and usable form.

The text of this edition covers no less that 256 pages, affording abundant material for sight reading. It is a pity, however, not to have added a few of Cicero's letters, as they give an insight into his private life and character which can never be obtained by reading only his formal orations.

The *Notes* are admirable so far as they are explanatory of points in grammar, history, or antiquities; but as regards the help they should afford the student on passages which are difficult to translate accurately and yet smoothly, they are meager and insufficient. Thus, there is no comment whatever on the expression *indicio exposito atque edito* (in Cat. III, 11), a phrase which the pupil with the aid of the vocabulary could not be expected to translate better than "when the evidence had been set forth and published." The notes to the oration for Archias are especially unsatisfactory in this particular; *e. g.*, *neque in aspectum lucemque proferre* (§ 12), and *Quam multas nobis imagines . . . . reliquerunt* (§ 14) are passed by unnoticed. Of course one may easily run to the other extreme, and provide altogether unnecessary help. But it is only reasonable that the pupil should receive some assistance on such passages. Of the notes to the orations generally required for entrance to college, the following are open to criticism: (**77**, 8) *at the height of his power* is somewhat forced for *incolumis*. (**101**, 4) November 6 does not agree with the date given on page 99—November 7; and both conflict with the note to (**102**, 27). **105**, 15) B. C. 64 should be B. C. 66. (**127**, 28) *videbitis* would be impossible, since the future could not be used in a sentence referring to past time; *videretis* may "stand for" an original *videbitis*. So also *defers* (**129**, 18), and *incenderimus* (**130**, 5). *Cf. gereretur* (**71**, 1) (**129**, 2) Not *tertia vigilia*, but *tertia vigilia exacta* is about 3 A.M. (**129**,

30) *assurance of safety* does not bring out the idea contained in *publicam*.

The *vocabulary* is excellent in every particular, but more especially with reference to the derivation of words, in clearly separating stems and suffixes. There is little use, however, in giving roots without adding their general significance.

On the whole, the New Cicero shows a praiseworthy advance upon the older edition, and cannot fail to make its influence strongly felt for thoroughgoing scholarship wherever it is adopted as a text-book.

JARED W. SCUDDER

ALBANY ACADEMY

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*Topical Outlines of Roman History.* By WM. L. BURDICK. Scott, Foresman & Co.

THE sixty-four pages of this book contain the names of books to be studied, a statement about the geography of Roman history, chronological outlines, specimen college examination papers, a pronouncing vocabulary, and a list of additional topics and suggestions. Under this last-named heading are to be found a list of thirty-five generally important topics and lists of the provinces, of the Roman writers, of the most famous Romans, of the prominent Scipios, and of thirty important dates, together with a geographical test, a genealogical table of the families of Cæsar and Augustus and a series of questions on the Roman constitution and government.

It does not pretend to be a text-book, but declares that its main object is to suggest outlines of work for the period from the founding of Rome to the death of Marcus Aurelius.

W. J. CHASE

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*American History Told by Contemporaries.* Vol. I. Era of Colonization, 1492–1689. Edited by ALBERT BUSHNELL HART. The Macmillan Company.

IN this series, to be completed in four volumes, it is designed to have the entire story of American history told by its makers. In the 600 pages of this first of the series there are presented 157 selections from the texts of those writings which are the most authoritative

sources. These selections are almost all from narrative, not constitutional, documents; and thus explorers, missionaries, and colonizers tell of travel, strange people, and new experiences, and the social and industrial conditions of those times are vividly revealed by those who lived among them. Beginning with the sagas of the Northmen, the documents narrate the discoveries of the Norse, Spanish, English, French, and Dutch explorers. Concerning colonization, the reasons for it, the regulation of it, and the participators in it, Harrison, Peckham, Hakluyt, and a dozen more are made to speak; and of the early conditions, circumstances of settlement, and the local life of Southern, New England, and Middle colonies many other extracts make revelation. Though they are but fragments of the original writings, yet they are so judiciously chosen, and are so generous that they do not fail either to sustain the interest of the reader or to reveal the historical wealth they possess.

The introduction to this volume contains in more than a score of pages valuable information about the sources themselves their educative value, where to find them, and how to use them.

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THE MORGAN PARK ACADEMY OF THE
UNIVERSITY OF CHICAGO

## NORTHERN MICHIGAN TEACHERS' ASSOCIATION

THE annual meeting of the Northern Michigan Teachers' Association was fortunate in having a greatly increased attendance, and especially, in having the presence of the entire state board of education, together with the president of the State Normal School, Dr. Boone. The spirit and enthusiasm of each session was highly commended by those who are accustomed to attend similar gatherings elsewhere. Each paper showed care and work, and the discussions were prompt, vigorous and to the point.

The programme was made general, that it might be of interest to teachers in all grades of public-school work. This report, however, will touch only upon those points brought out or emphasized which are of interest to teachers in the department of secondary education.

The paper on "Vertical Writing" brought out some points of interest to high-school teachers, and provoked a very helpful discussion of the whole subject of penmanship. In all writing, legibility, rapidity and beauty are cardinal virtues. These results, it was maintained, can be and are secured readily by competent teachers of the subject. No radical ground was taken in favor of either "slant" or "vertical" writing in the discussion. Both were commended. But the very important point was brought out that in the matter of penmanship the physical constitution of the pupil should be given due freedom. Some seem to be physically constituted for vertical writing. Perhaps the "backhander" was nature's call for the vertical system. And out of all of the present discussion of this subject will probably come the conclusion that good writing may be slanting, slightly slanting or vertical. It was agreed that the muscular movement was the best in all cases, and should be taught from the beginning.

The evening programme was in the nature of a banquet. The "People and the Public Schools" was presented from the side of the people by Mr. Sawyer, president of Cadillac's board of education. He believed that the people wanted to see good results in essential things: They want their children taught to read well, spell correctly, write neatly, figure accurately, express themselves with facility orally and in written form; in short to become masters of at least the tools of education. Every teacher gave ready assent to this demand for "practical results." Yet all were glad to have Dr. Boone immediately say, that a man is worth to the world what he can do, to himself what he can enjoy. Education *is* external, but it is also internal. It is something within. Incidentally we must earn a living, but more than this is necessary in living.

State Superintendent Jason E. Hammond is just now visiting the schools in various parts of the state and said that to the "traveler" the ideal teacher was the one who presented a winsome face, erect carriage and a prepossessing manner. She is punctual, well dressed and cheerful. Her influence is an affirmative influence. Her motto is progress, her instruction progressive. The lessons she teaches from books are a small part of the instruction that she gives. She loves the world and does not complain in the presence of the world's most precious inhabitants. Her reproof is encouragement and her restraint is leadership.

The paper read at the Saturday morning session on, "The Relation of the High School to the State," by Superintendent E. F. Gee, was full of interest to every high-school teacher. Mr. Gee thought it proper to consider (1) whether the relation of the high school to the state is as important as the friends of the high school believe to be; (2) what particular sphere the high school should occupy in fulfilling its duty to the state; and (3) some ways in which we as teachers may help the high schools to serve the state most effectively. After briefly reviewing the origin and growth of the high school in Michigan the paper asserted that the pupil in our grammar school may learn the facts of the history of our country, he may see something of the relation of these facts, but not until his mental powers have broadened can he understand their full bearing on our present state; not until then can he begin to comprehend the meaning of the duties that devolve upon him as a member of a state. No one will seriously maintain that the child of thirteen has received from the state sufficient instruction as to his duties and privileges as a citizen. Our high schools therefore must undertake the work of instruction which shall prepare the young for the higher duties and responsibilties of government. Granted that only 10 or 15 per cent. of all the children take advantage of the opportunities offered in the high school, the state owes it to itself to train this number to the best of her ability, for they shall be the leaven which shall tend to transform the whole. The ideal relation between the high school and the state is of a reciprocal nature. The more the state does for the high school, the more the school will do for the state, and this reciprocal action may be carried so far that the character of the school will determine to a large extent the character of the state. What shall the high-school teacher do? Teach the principles which led to the founding of our government and which have guided in erecting and maintaining its superstructure so successfully. Teach these through the lives of our great men. A few lessons from "Honest Abe," well brought out may be worth everything to the boy whose soul is thus kindled into a flame of noble activity when it otherwise might have smoldered in spiritual and intellectual darkness. In the high school should be taught a knowledge of our various institutions of local, state and general government. In addition to the instruction in civic science, the high school owes to the state training

and discipline in those moral virtues which lie at the foundation of good citizenship. It may well be considered a cause for alarm when godless, though highly educated men, come to occupy leading positions in our educational institutions. The high interests of the state require that our education shall include those virtues, which make good men and which impel men to right conduct and right action.

President Grawn then resumed the chair, which had been occupied during the morning by the vice president, Mr. Luther. Every minute until train time was taken up in a splendid discussion of the Purpose and Place of Examinations. Superintendent Blodgett, in leading this discussion, was at his best. He gave no formal paper, but talked the whole question over in a masterly manner. He would avoid the extremes of too many long, formal examinations, and no examination at all. He would not have the teacher assume that cold, sentinellike manner, calculated to freeze the last warm drop of blood in the hearts of the already terror-stricken class; nor would he have the teachers overstrain the pupils' sense of honesty by leaving them alone. Frequent written tests in regular recitation were urged to be followed by a thorough formal examination at the close of a term or semester. With energy and good common sense the discussion was continued by Superintendents Satler, Simmons and Wilson of the state board. Editor Powers, also of the state board, got in the last word. Being an orthodox man, Mr. Powers believed in the wisdom and efficacy of the "day of judgment." He thought it had a mighty and stimulating effect all along, in all the teaching and learning, for both teacher and pupil to know that there was going to be a day of reckoning. And we wanted to add that this day, like that other one, is not set for condemnation, but as a day of approval, when every worthy one may hear the welcome, "Well done."

During the morning the nominating committee, Superintendent Gee, Principal Maxwell, and Principal Horn, reported the following as officers for the ensuing year, which report was adopted:

President, Superintendent C. T. Grawn, Traverse City; Vice President, Superintendent H. T. Blodgett, Ludington; Secretary and Treasurer, Superintendent J. H. Kaye, Cadillac; Member of Executive Committee, Superintendent J. R. Miller, Big Rapids.

The executive committee, consisting of the officers, together with all of the county commissioners in the territory of the association, were made a committee on membership.

The president appointed the following committee on publication for the coming year: Principal C. H. Horn, Superintendent E. L. Luther, Superintendent H. C. Lott.

Adjourned.

C. H. HORN

CADILLAC HIGH SCHOOL

# NOTES

IT is expected that the Odes and Epodes of Horace in the Students Series of Latin Classics edited by Dr. Paul Shorey of the University of Chicago, will be ready before the opening of the year.

THE Executive Committee of the National Educational Association has voted to allow the Committee on College Entrance Requirements an appropriation of $500 to continue its work the present year.

IN AN early number of the *Atlantic Monthly* will appear an article by Mrs. Alice Freeman Palmer on "The Ideal Relations of a Community to Its Public Schools," based on the study of a fortunate New England town.

D. C. HEATH & CO., publishers, Boston, have in press for immediate issue in Heath's Modern Language Series an *Elementary Scientific French Reader*, by Mme. P. Mariotte-Davies, professor of French at Purdue University.

PROFESSOR W. M. DAVIS, of Harvard University, has accepted an appointment to serve on the Committee on College Entrance Requirements during this year, in the place of Professor Hanus, who is absent in Europe.

PRESIDENT CHARLES W. ELIOT, of Harvard University, writes in the *Kindergarten Magazine:* "The instruction of children between four and six is just as much a part of the public business as that of children between six and eight."

PROFESSOR MONTROSE MARATHAN RAMSAY will publish at once, through Messrs. Henry Holt & Co., an *Elementary Spanish Reader*, with a vocabulary. It will include a number of poems, six short stories, and a novelette each complete.

*Literature*, the new journal of literary criticism published by Harper & Brothers, promises to take rank as the most scholarly and impartial of all our critical journals. The numbers thus far issued are recommended highly to all who are interested in literary matters.

MESSRS. LEACH, SHEWELL, AND SANBORN announce for immediate publication *Cicero's de Amicitia*, a companion volume to the *de Senectute*, which was published in May. Both are edited by Professor Bennett of Cornell. They also announce *Lamb's Essays of Elia*, edited by Miss Caroline Ladd Crew, Friends School, Wilmington, Del.

THE next volume in the series of "Heath's English Classics" will be *Dryden's Palamon and Arcite*, edited by Professor W. H. Crawshaw, of Colgate University. The volume will contain the standard text of the poem, with introduction, notes, and suggestions for study.

THE department of French in Harvard University gave, in Sanders' Theater, Cambridge, on the evenings of December 6, 8, and 10, performances of "Athalie." The tragedy was performed by a company of students, graduates and instructors of Harvard University and Radcliff College.

*The Student's American History*, by D. H. Montgomery (pp. 523 and LV), Ginn & Co.), deals with constitutional and political history, yet shows clearly the steps in social and industrial progress. Its numerous maps, plans and facsimiles of ancient documents add interest to the text, as do also the very many references to the original sources, from which quotations are freely made. It is an excellent text-book for advanced study in the secondary schools, or for freshman or sophomore work in college.

THE second annual meeting of the New York State Science Teachers' Association will be held at Ithaca, N. Y., December 30–31, 1897. The meetings will be held in the physical lecture room of Franklin Hall on the Cornell University campus. At the same time there will meet at Ithaca the Association of American Anatomists, the American Morphological Society, the American Physiological Society, the American Psychological Society, the Association for Botanical Morphology and Physiology, and Section H (Anthropology) of the American Association for the Advancement of Science.

*This Country of Ours*, by Benjamin Harrison (Charles Scribner's Sons), is neither a treatise on our country's material resources nor a dissertation on civics, but a view of the machinery of our national government. From the wealth of his practical experience he furnishes instruction about the constitution, Congress, the president, the eight executive departments, the independent boards and commissions, and the judiciary. The treatment is interesting and not technical, and for reference or for supplementary reading in secondary schools in connection with either United States history or civics the book will be useful.

WE have received from W. F. Conover, principal of the "B" Street School, San Diego, Cal., a new term promotion blank which is to be used in the San Diego city schools. The blank is called "The Pupil as an Individual." It covers the pupil's record in various studies, in power of expression, both oral and written, in perception, imagination, memory, reason, application, sight, hearing, health, and temperament. The aim of the blank is to transmit the accumulated experience of one teacher to the teacher next assuming responsibility for the pupil's development. This general idea is finding a good deal of favor in various parts of the country, though principals

are only beginning to put it into practice. It is a practical form of child-study in the higher grades, and is especially applicable to secondary schools.

*The Study of Mediæval History by the Library Method*, by M. S. Getchell (Ginn & Co.), is designed for high schools, and presents in about eighty pages a list of the most important topics of history between 476 and 1492, together with references by pages to sources of information. The sources named are numerous, and comprise text-books, books of reference, and standard works on special periods and subjects. As other helps there are given a chronological table of the rulers of England, France, Germany, and the Holy Roman Empire, and a short list of those works of general literature which relate to this period. The book is well worth the examination of those who use this method of history teaching.

THE following combined paradigm of Latin verbal nouns has been in use in the Chester (Pa.) High School for some years. The synthesis seems to be of value in the right place:

*Nom.*—amare.
*Gen.*—amandi.
*Dat.*—amando (w. adj).
*Acc.*—amare (dir. obj., subj. of inf).
amandum (w. prep).
amatum (limit of motion).
*Abl.*—amando (means).
amatu (specification).

THE following statistics show with what success the Indian office is meeting in carrying out its policy to render the Indian self-educative: At the close of 1894 there were fifty-six Indians and halfbreeds in the Indian school service receiving $480 and over per annum. At the close of 1895 the number had increased to seventy-nine, and at the close of 1896 to 108, an increase of 93 per cent. At the close of 1894 there were 145 Indians and halfbreeds in the Indian service receiving $300 and upward per annum. At the end of 1895 there were 186 and at the end of 1896 there were 234, an increase of 61 per cent. At the close of 1894 there were 312 Indians and halfbreeds in the Indian service receiving $120 and upward per annum. At the close of 1895 the number had increased to 371, and at the close of 1896 to 435, an increase of 40 per cent.

THE Committee on Entrance Requirements of the Eastern Association of Physics Teachers has issued the following general statement to the committes on admission requirements in the several colleges:

The Eastern Association of Physics Teachers respectfully request you to accept, as a part of the admission requirements to your institution, the subject of Laboratory Physics, either as a subject required of all candidates or as an

alternative for other subjects, Classics, Mathematics, Modern Languages, etc., to count as a full equivalent of subjects pursued the same length of time.

Physics is taught in almost all high schools, and Laboratory Physics in a large number, and so many schools are prepared to furnish adequate preparation in Physics as to warrant placing it on a par with other studies. An optional requirement in Physics, while helpful to the secondary schools in the arrangement of courses of study and the adjustment of college and general sections, would be especially advantageous to the colleges in the number and quality of students they would receive. We believe it would be easy to formulate a method of examination to test the candidate's proficiency.

SOME of the universities are doing a real service to secondary education through carefully prepared monographs on the teaching of the various subjects that enter into the college requirements for admission, these being in the main, as they ought to be altogether, the subjects now constituting the curricula of high schools and academies. The series of articles now appearing in the SCHOOL REVIEW from the various departments of the University of Chicago is an instance of this work. Following a similar plan Harvard has just issued two pamphlets, *Outline of Requirements in Meteorology* and *English in the Secondary Schools*. The latter is a detailed plan for work in English adapted to the programmes of the Committee of Ten. During the past year the faculty of Harvard has been engaged on a revision of the requirements for admission to Harvard College and to the Lawrence Scientific School. The new requirements are now issued in a neat pamphlet. These three papers will be helpful not only to those teachers who are preparing students for Harvard but also to all who have been following with interest the important discussions of the past two years in regard to the subject of entrance requirements.

THE executive committee of the National Educational Association, at its meeting in Chicago, November 27, decided, by a unanimous vote, to select Washington as the place for the next meeting of the National Educational Association, and the time, July 7 to 13, inclusive. The choice was a matter of no little difficulty owing to the very strong attractions offered by the competing cities, viz.: Omaha, Salt Lake City, and Los Angeles. Already the railroad lines from Chicago to Washington have granted the usual one fare for the round trip, plus the membership fee. Formal action as to ticket conditions and extension of tickets for return will be announced at an early date. It is believed that these ticket conditions will be more liberal than have ever before been secured. The meetings will open on the evening of Thursday, July 7, and close on the evening of Tuesday, July 13. The advantages of this arrangement are that Sunday travel going to or from the meeting will be unnecessary. There will be no session on the afternoon and evening of Saturday, the time being given to social and other recreations. The

churches of Washington will be invited to arrange for sermons and addresses bearing upon educational themes on Sunday, the 9th. It is believed that this relief of Saturday afternoon and Sunday occurring in the midst of the session will be welcome.

HOW MANY of these meetings of educational organizations do you attend? What others ought you to attend?

Meeting of Department of Superintendence, February 1898, Chattanooga.

Annual meeting of the (*i. e.*, yours) State Teachers' Association.

University Convocation, Albany, 1898.

Annual meeting of the National Educational Association of the United States, July 1898, Washington, D. C. Department of secondary education.

Holiday Conference of the Associated Academic Principals of the state of New York, Syracuse, December.

Annual Meeting of the Association of Grammar School Principals of the state of New York, Syracuse, December.

New England Association of Colleges and Preparatory Schools. Meets in October, Ray Greene Huling, English High School, Cambridge, Mass., Secretary.

North Central Association of Colleges and Preparatory Schools. Meets in February, F. L. Bliss, Detroit High School, Secretary.

Association of Colleges and Preparatory Schools of the Middle States and Maryland. Meets the Friday and Saturday following Thanksgiving, Dana C. Munro, University of Pennsylvania, Philadelphia, Pa., Secretary.

Headmasters' Association of the United States. Meets in the Christmas holidays.

American Institute of Instruction. Meets in July.

Modern Language Association of America. Meets in the Christmas holidays. Jas. W. Bright, Johns Hopkins University, Baltimore, Md.; H. M. Schmidt-Wartenberg, University of Chicago, Secretaries.

American Philological Association. Meets in July.

American Historical Association. Meets in the Christmas holidays.

Association of Colleges and Preparatory Schools of the Southern States.

Michigan Schoolmasters' Club. Meets twice a year, Ann Arbor, Mich., in Thanksgiving and Easter vacations, E. C. Goddard, Ann Arbor, Mich., Secretary (1897).

# NEW PUBLICATIONS

## PEDAGOGY

Thoughts and Theories of Life and Education. By J. L. Spalding, Bishop of Peoria 4½ x 7 in.; pp. 236. Price $1. A. C. McClurg & Co.

Day Dreams of a Schoolmaster. By D'Arcy W. Thompson, 4¾ x 7¼ in.; pp. 328.

The Scholemaster. By Roger Ascham, edited by Edward Arber, F.S.A. 4¾ x 7¼ in.; pp. 317. D. C. Heath & Co.

The Work and Words of the National Congress of Mothers, held in the City of Washington, D. C., February 17, 18 and 19, 1897. Paper cover. 6 x 9¼ in.; pp. 285. D. Appleton & Co.

Teaching as a Business, four addresses by C. W. Bardeen, editor of the School Bulletin. 5 x 7 in.; pp. 154. Price, cloth, $1; manilla, 50 cents. C. W. Bardeen, Publisher, Syracuse, N. Y.

The Herbartian Psychology Applied to Education. Being a Series of Essays Applying the Psychology of Johann Friedrich Herbart. By John Adams, M.A., Rector of the Free Church Training College, Aberdeen, Scotland. 5 x 7¼ in.; pp. iv+284. D. C. Heath & Co.

Regent's Bulletin, No. 42, August 1897. Thirty-Fifth University Convocation of the State of New York, June 28–30, 1897. 7 x 10 in.; pp. 212. Price 25 cents. Albany: University of the State of New York.

Nature Study in Elementary Schools. Manual for Teachers. By Mrs. Lucy Langdon Williams Wilson, Ph.D. 5 x 7 in.; pp. viii + 262. Price 90 cents. The Macmillan Co.

The Subconscious Self and Its Relation to Education and Health. By Louis Waldstein, M.D. 5¼ x 7¾ in.; pp. 171. Price $1.25. Chas. Scribner's Sons.

## ANCIENT CLASSICAL LANGUAGES AND LITERATURES

The University Tutorial Series. Cicero: De Senectute. Edited by A. H. Allcroft M.A., Oxon., and W. F. Mason, M.A., Lond. 5¾ x 7 in.; pp. 102. W. B. Clive, University Correspondence College Press, London.

Letters of Cicero, edited by Frank Frost Abbott, of the University of Chicago. 4¾ x 7½ in.; pp. 315. Price $1.35. Ginn & Co. College Series of Latin Authors.

Lindsay's Latin Inscriptions, illustrating the history of the language. By W. M. Lindsay, M.A., Fellow of Jesus College, Oxford. 4¾ x 7 in.; pp. 134. Price $1.25. Allyn & Bacon, Boston and Chicago.

Macmillan's Elementary Latin-English Dictionary to the Prose Writings of Cæsar, Sallust, Nepos, Livy, Eutropius, and portions of Cicero; and the Poems of Catullus, Vergil, Horace, Ovid, and Phaedrus. For Use in Preparatory Schools and Junior Forms. By the Rev. G. H. Nall, M.A., Assistant Master at Westminster School. 5 x 7½ in.; pp. 432. Price $1. The Macmillian Co.

## ENGLISH LANGUAGE AND LITERATURE

Annotated English Classics. Tennyson's The Princess. Edited, with Introduction and Notes, by Albert S. Cook. 4¾ x 7¼ in.; pp. 187. Price 50 cents. Ginn & Co.

Heath's English Classics. Milton's Paradise Lost. Books I and II, and selections. Edited by Albert Perry Walker, M.A., English High School, Boston. 4⅜ x 6½ in.; pp. 270. Price 40 cents. D. C. Heath & Co.

The University Tutorial Series. The English Language: Its History and Structure. By W. H. Low, M.A. Fourth Edition, Revised. 4¾ x 7 in.; pp. 239. W. B. Clive, University Correspondence College Press, London.

Maynard's English Classic Series. Tennyson's The Princess. 4¼ x 6½ in.; pp. 147. Price 24 cents. Maynard, Merrill & Co.

Milton's Lycidas. Edited by John Phelps Fruit. 4¾ x 7½ in.; pp. 29. Price 30 cents. Ginn & Co.

Principles of Vocal Expression and Literary Interpretation. By Wm. B. Chamberlain, A.M., of the Chicago Theological Seminary, and S. H. Clark, Ph.B., of the University of Chicago. 5½ x 8 in.; pp. 473. Scott, Foresman & Co., Chicago.

Poems by William Wordsworth. A selection edited by Edward Dowden, Professor of English Literature in the University of Dublin. 5¼ x 7¼ in.: pp. 522. Price $1.40. Ginn & Co., Boston. The Athenæum Press Series.

Carlyle's Essay on Burns, edited by Chas. L. Hanson. 5 x 7½ in.; pp. 84. Price 35 cents. Ginn & Co. Annotated English Classics.

Specimens of the pre-Shakesperian Drama, with an introduction, notes and glossary. By John Matthews Manley, Professor in Brown University. Vol. I. 5¼ x 7¼ in.; pp. xiv+618. Price $1.40. Ginn & Co. The Athenæum Press Series.

Heroes and Hero Worship, and the Heroic in History. By Thomas Carlyle. Edited, with Notes and Introduction, by Mrs. Annie Russell Marble, A.M. 7 x 5 in.; pp. xxix + 415. Price 80 cents. The Macmillan Co.

The Riverside Literature Series. Stories from The Arabian Nights. With an Introductory Note. 4¾ x 7 in.; pp. 184. Houghton, Mifflin & Co.

A Manual of Composition and Rhetoric for Use in Schools and Colleges. By John S. Hart, LL.D. Revised Edition by James Morgan Hart, Professor of English Philology and Rhetoric in Cornell University, N. Y. 5 x 7½ in.; pp. xvi + 341. Eldredge & Brothers.

Selections from the Prose Writings of Matthew Arnold. Edited, with Notes and an Introduction, by Lewis E. Gates, Assistant Professor of English, Harvard University. 4¾ x 6¾ in.; pp. xci + 348. Henry Holt & Co.

Maldon and Brunnanburgh. Two Old English Songs of Battle. Edited by Charles Langley Crow, Ph.D., Professor of Teutonic Languages, Weatherford College, Texas. 5 x 7½ in.; pp. xxxvii + 47. Ginn & Co.

The Expository Paragraph and Sentence. An Elementary Manual of Composition. By Charles Sears Baldwin, Ph.D., Instructor in Rhetoric in Yale University. 4½ x 6¼ in.; pp. vii + 53. Longmans, Green & Co.

Practical Hints for Young Writers, Readers, and Book Buyers. By [Frederick Lawrence Knowles. 5 x 7¼ in.; pp. 73. L. C. Page & Co.

Burke's Speech on Conciliation with America. Edited, with Notes and an Introduction, by Hammond Lamont, Associate Professor of Rhetoric in Brown University. 4¾ x 7½ in.; pp. 152. Price 60 cents. Ginn & Co. The Athenæum Press Series.

## MODERN FOREIGN LANGUAGES AND LITERATURES

Heath's Modern Language Series. Johanna Spyri's Moni der Geissbub. With a vocabulary by H. A. Guerber. 5 x 7¼ in.; pp. 74. Price 25 cents. D. C. Heath & Co.

La Guerre de L'Indépendence. Par A. Moireau. Edited, with notes, by A. N. van Daell. Ginn & Co.

Sainte-Beuve. Seven of the Causeries du Lundi. Edited, with Notes and an Introduction, by George McLean Harper, Ph.D., Woodhull Professor of Romance Languages in Princeton University 4½ x 6¾ in.; pp. li+176. Price 75 cents. Henry Holt & Co.

First Facts and Sentences in French. By Victor Bétis and Howard Swan. 5 x 7¼ in.; pp. 125. Price 65 cents. Chas. Scribner's Sons.

## SCIENCE AND MATHEMATICS

The Elements of Natural Philosophy, for the Use of Schools and Academies. By Edwin J. Houston, A.M., Ph.D. Revised Edition. 5 x 7½ in.; pp. 323. Price $1. Eldredge & Brother.

Standard School Physiology. Hygiene Anatomy. By Russell B. Smith, M.D., and Everett C. Willard, A.M. 5 x 7½ in.; pp. iv+274. The Morse Company.

Song Birds and Water Fowl. By H. E. Parkhurst. Illustrated. 5 x 7¼ in.; pp. viii+286. Price $1.50. Charles Scribner's Sons.

Famous Problems of Elementary Geometry. The Duplication of the Cube. The Trisection of an Angle. The Quadrature of the Circle. An Authorized Translation of F. Klein's Vorträge über Ausgëwahlte Frage der Elementargeometrie Ausgearbeitet von F. Tägert. By Wooster Woodruff Beman, Professor of Mathematics in the University of Michigan, and David Eugene Smith, Professor of Mathematics in the Michigan State Normal College. 5 x 7½ in.; pp. ix+80. Ginn & Co.

Light, Visible and Invisible. A Series of Lectures Delivered at the Royal Institution of Great Britain, at Christmas, 1896. By Silvanus P. Thompson, D.Sc., Principal of, and Professor of Physics in, the City and Guilds Technical College, Finsbury, London. 5 x 7½ in.; pp. xii+294. Price $1.50. The Macmillan Co.

Standard School Algebra. By George E. Atwood. 5 x 7½ in.; pp. 372. The Morse Company.

Ordinary Differential Equations. An Elementary Text-Book. With an Introduction to Lie's Theory of the Group of One Parameter. By James Morris Page, Ph.D., Adjunct Professor of Pure Mathematics, University of Virginia. 5 x 7½ in.; pp. xviii+226. Price $1.25. The Macmillan Co.

Strength of Materials. A Text-book for Use in Scientific High Schools and Schools of Technology. By Thomas W. Mather, Ph.B., M.E. Principal of the Boardman Scientific High School, New Haven, Conn. 5¼ x 8 in.; pp. 186. Boardman School Press.

## HISTORY AND POLITICAL SCIENCE

The Workers: an Experiment in Reality. By Walter A. Wyckoff, Lecturer on Sociology in Princeton University. The East. 5 x 7½ in.; pp. 270. Price $1.25. Charles Scribner's Sons.

Civil Government in the United States. By A. O. Wright. Wisconsin Edition. 5¼ x 7½ in.; pp. 350. Midland Publishing Co., Madison, Wis.

The War of Greek Independence, 1821 to 1833. By W. Alison Phillips. 5 x 7½ in.; pp. 428. Price $1.50. Chas. Scribner's Sons.

Topical Outlines of Roman History, from the founding of the city to the reign of Commodus, for college preparatory students. Compiled by Wm. L. Burdick, Ph.D. Second Edition. 4½ x 6¾ in.; pp. 64. Scott, Foresman & Co., Chicago.

This Country of Ours. By Benjamin Harrison, ex-President of the United States. 5¼ x 7½ in.; pp. xxiv + 360. Price $1.50. Chas. Scribner's Sons.

MISCELLANEOUS

Gloria Victis. By J. A. Mitchell, Editor of Life. 4¾ x 7 in.; pp. 269. Price $1.25. Charles Scribner's Sons.

Life's Comedy. Second Series. 9¼ x 12 in.; pp. 34. Price 25 cents. Charles Scribner's Sons.

A Capitol Courtship. Alexander Black. 4½ x 7⅛ in.; pp. 104. Price $1. Chas. Scribner's Sons.

His Grace of Osmonde. By Frances Hodgson Burnett. 5 x 7½ in.; pp. 465. Price $1.50. Chas. Scribner's Sons.

Social Life in Old Virginia Before the War. By Thomas Nelson Page. With Illustrations by the Misses Cowles. 5½ x 8 in.; pp. 109. Price $1.50. Charles Scribner's Sons.


# NEW AND IMPORTANT BOOKS.

## ENGLISH.

**The Principles of Composition.** By HENRY G. PEARSON, with Introduction by ARLO BATES, Professor of English in the Mass. Institute of Technology. Cloth. 165 pages. 50 cts.

**DeQuincey's Confessions of an English Opium-Eater.** Edited, with Introduction, by G. A. WANCHOPE, Prof. of English Literature in the State University of Iowa. *Ready January 10.*

**DeQuincey's Flight of a Tartar Tribe.** With Introduction and Notes by Prof. G. A. WANCHOPE. Cloth. 111 pages. 30 cts.

**Dryden's Palamon and Arcite.** Edited by W. H. CRAWSHAW, Prof. of English Literature in Colgate Univ., and author of "The Interpretation of Literature." *Ready January 15.*

**Milton's Paradise Lost.** Books I and II, with Selections from the Later Books. Edited, with Aids to Study, by A. P. WALKER, Instructor in the Boston English High School. Cloth. Illustrated, 282 pages. 50 cts.

**Tennyson's The Princess.** Edited by A. J. GEORGE, editor of "Select Poems of Burns," "Select Poems of Wordsworth," etc. Cloth. Illustrated. 236 pages. 40 cts.

**Coleridge's Rime of the Ancient Mariner.** Contains the ordinary version, and also the version of 1798 as first published in "Lyrical Ballads." Edited by A. J. GEORGE. Cloth. 150 pages. 35 cts.

**Burke's Speech on Conciliation.** (A. J. George) 30 cts.

**Carlyle's Essay on Burns.** (A. J. George) 30 cts.

**Macbeth.** In the *Arden Shakespeare Series.* Edited by E. K. CHAMBERS. Cloth. 188 pages. 40 cts.

**The Tempest.** In the *Arden Shakespeare Series.* Edited by FREDERICK S. BOAS, M. A., Oxford. Cloth. 159 pages. 40 cts.

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